

RECOGNITION

JOURNAL



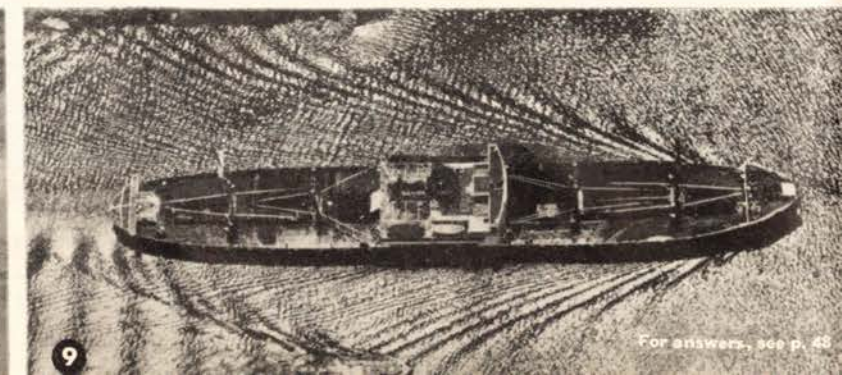
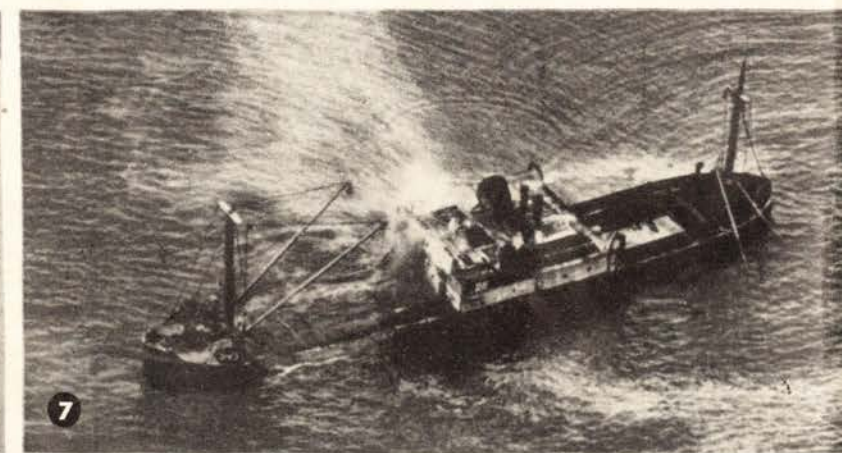
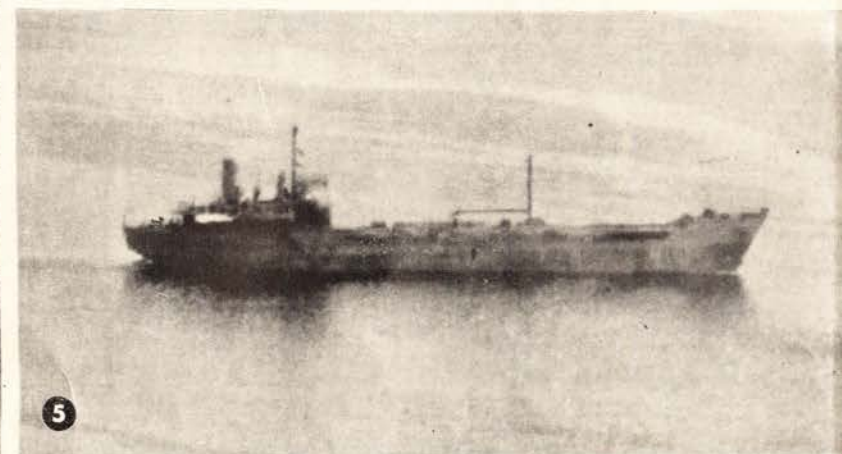
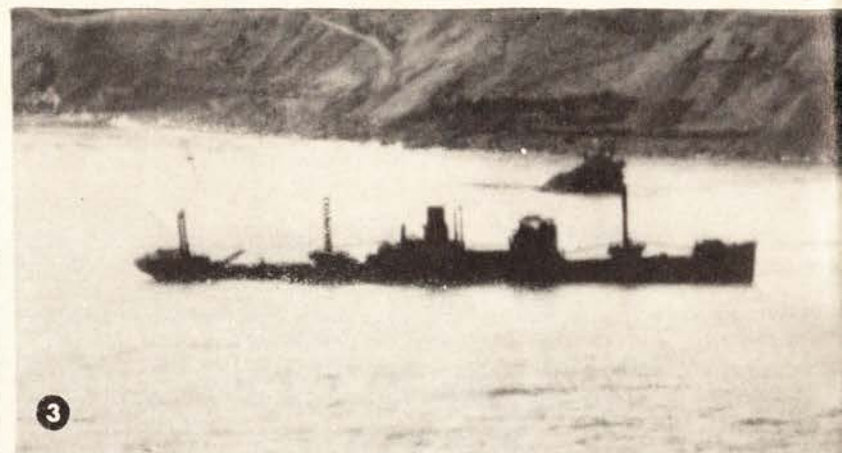
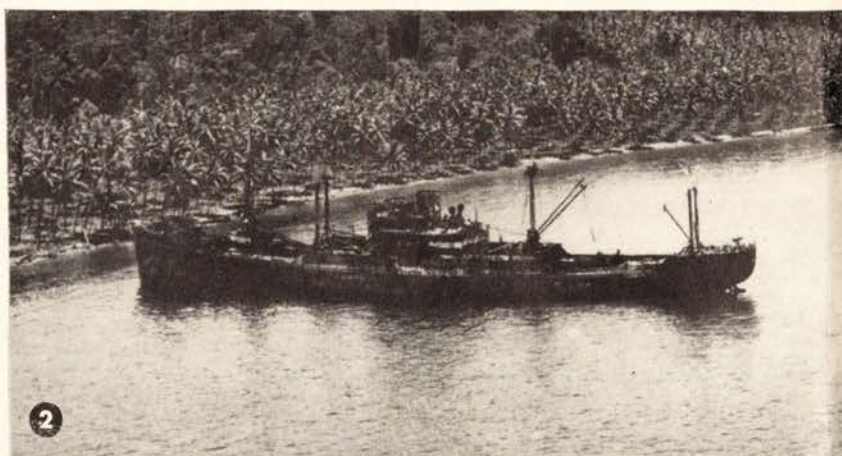
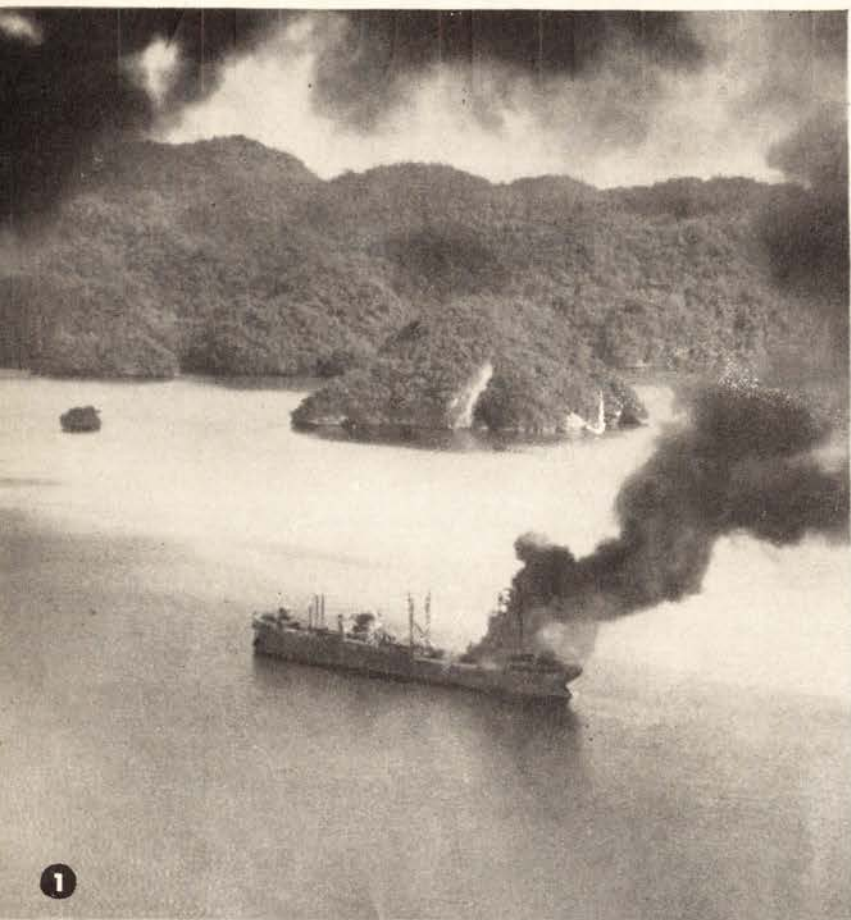
TBM'S OVER JAPAN

~~RESTRICTED~~
MAY, 1945
NUMBER 21

WAR DEPT.
NAVY DEPT.



QUIZ NO. 1: JIG MIKE SUGAR TARE



RECOGNITION

NUMBER 21

MAY, 1945

JOURNAL

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UNESCORTED B-29's STARTED THESE FIRES IN YAWATA'S STEEL MILLS. GOOD FIGHTER COVER SHOULD GREATLY INCREASE THEIR EFFECTIVENESS

RECOGNITION OVER JAPAN

With the capture of Iwo Jima and with bases on Okinawa, the vast Pacific air arena is being steadily jammed into a smaller area by U. S. forces. U. S. land bases are now within fighter range of Japan's major cities, and a great floating air base, Task Force 58, has more than once hurled its fighters and bombers (*see cover*) against the offensive heart of the empire. Thus the U. S. air effort can now be concentrated on pulverizing Japan's crowded industries and wearing down her air power at its source.

Many U. S. airmen in the Pacific are accustomed to flying 2,000- to 3,000-mile missions completely unescorted. Because fighters up until now have automatically been hostile, there was little need to acquire the recognition sense and fire-"control" discipline essential to smooth bomber-fighter teamwork. This was the experience of the Eighth AAF over Europe (*see Journal* for December 1944). Stated in terms of "Don't shoot your friends,"

recognition in the Eighth didn't mean enough. It was only when the bomber crews discovered that fighter cover was saving their own skins that they learned to tell Allied fighters from German.

Additional problems will face the U. S. fliers who will have to tackle Japan. From the very first B-29 raid on Tokyo, air traffic over Japanese home islands has become steadily heavier. For the first time both U. S. Army and Navy planes will be operating on a large scale in the same area at the same time, and air crews of both services will be responsible for each other's safety.

Furthermore, the Japanese are still pumping a great variety of new designs into their air forces, and intelligence officers know that these new designs are being confused with older types. These officers can plan a smart, economical air war only if they have completely dependable reports, and such reports can be secured only by alert combat crews thoroughly trained in recognition.



Four-engine bomber Rita (*left*) is photographed for the first time parked near a Liz (*right*). This overhead view shows Rita to be of con-

ventional design with a straight, bulky fuselage. Inboard nacelles project beyond wing's trailing edge. Span is about 107 ft.; length, 75 ft.



Army fighter Frank, encountered in numbers during Philippine campaign, is clean and smooth in appearance. Fuselage is long and taper-

ing in characteristic Japanese style but has more rounded contours than Oscar or Zeke. Fin and rudder are curved in outline, rather low.

LATEST JAPS

New planes are formidable, varied lot

Although Japan continues to suffer heavy losses in the air, U.S. airmen must be on guard for the reinforcements now reaching enemy squadrons. Japan's new warplanes show marked improvement in speed, toughness and firepower, and by their number and variety attest to the vigor of the Japanese aircraft industry. Fortunately, we are able to keep up with the ingenious enemy through a steady flow of reconnaissance photographs and captured matériel.

The month's haul is of particular significance. An undamaged Jack and Frank have been recovered from the debris of abandoned Jap airfields and provide us with the first clear views of these new fighters. A short-range navy interceptor, Jack (*right*) is heavily armed with four 20-mm. cannon in the wings and two nose-mounted MG's. Frank (*below*) is a trim, sturdy army design and perhaps the most dangerous fighter yet developed by our Pacific enemy.

The aerial photograph of Rita (probably Renzan) shown on opposite page indicates that the Japanese did not withdraw from the four-engine bomber class after Liz was relegated to transport duty. Now in the experimental stage, Rita may well prove a serious threat to our advance bases. Reports credit it with a maximum speed of 362 m.p.h. and ten cannon or machine guns of heavy caliber.

On page 6 are pictures of a vehicle-carrying glider which may indicate new Jap emphasis on airborne troop movements. Called KU-8, it may be designed for reinforcement of isolated positions or for launching raids behind our lines. Although the Japanese are concentrating on new designs, a new Betty model (*also on page 6*) indicates that they are sprucing up familiar types to meet fast-moving combat standards.



Fat, curved lines of Jack's turtleback fuselage are broken by the cockpit fairing. The round, radial nose projects beyond stubby wing like the end of a beer keg.



Powerful engine requires four-bladed propeller and gives Frank more prominent nose than most Jap fighters. Oval cowling is broken by air-

scoop in upper rim. Low wing has dihedral from the roots, mounts two 20-mm. cannon. Two 12.7-mm. MG's fire from the upper cowling.



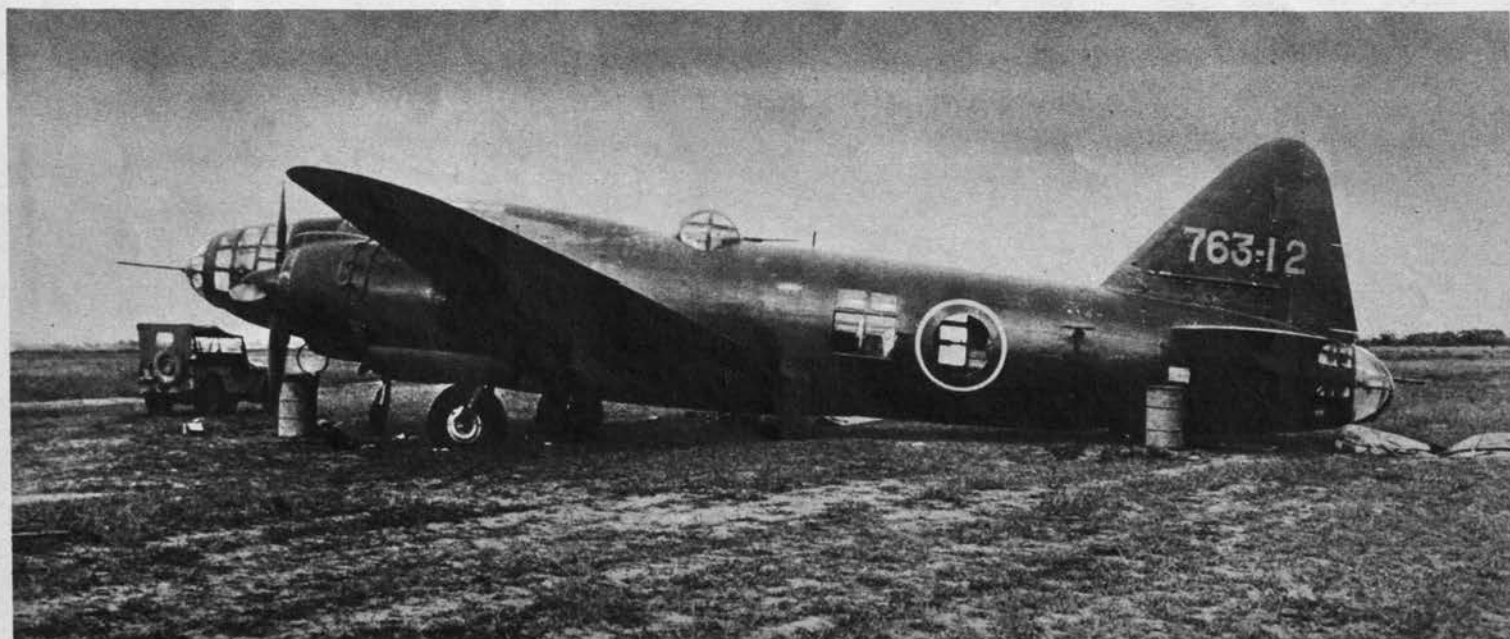
Japanese KU-8 has a tapering fuselage topped off by triangular fin and rudder of conventional Japanese design. The span is approximate-

ly 66 ft.; length, 40 ft. Wheels are believed to be jettisonable after the take-off and landings made on the curved skids under the nose.



Head-on, the KU-8 shows typical glider features—bulky fuselage and high, broad wing. KU-8 is the first Japanese glider designed to

carry vehicles. Nose section swings open laterally to load Jap equivalent of jeep. Alternately, it can carry 14 to 16 fully equipped troops.



Betty 24 differs little in appearance from earlier models. Burly fuselage remains straight and uncluttered though new bomb-bay doors

create a slight ventral bulge forward of waist-gun hatches. Betty 24 carries single 7.7-mm. MG in nose, four flexible 20-mm. cannon.



NEW COMET HAS CAST TURRET FRONT WITH BULGING GUN MANTLET, PROMINENT CUPOLA. NOTE THE FIVE BOGIES, FOUR RETURN ROLLERS

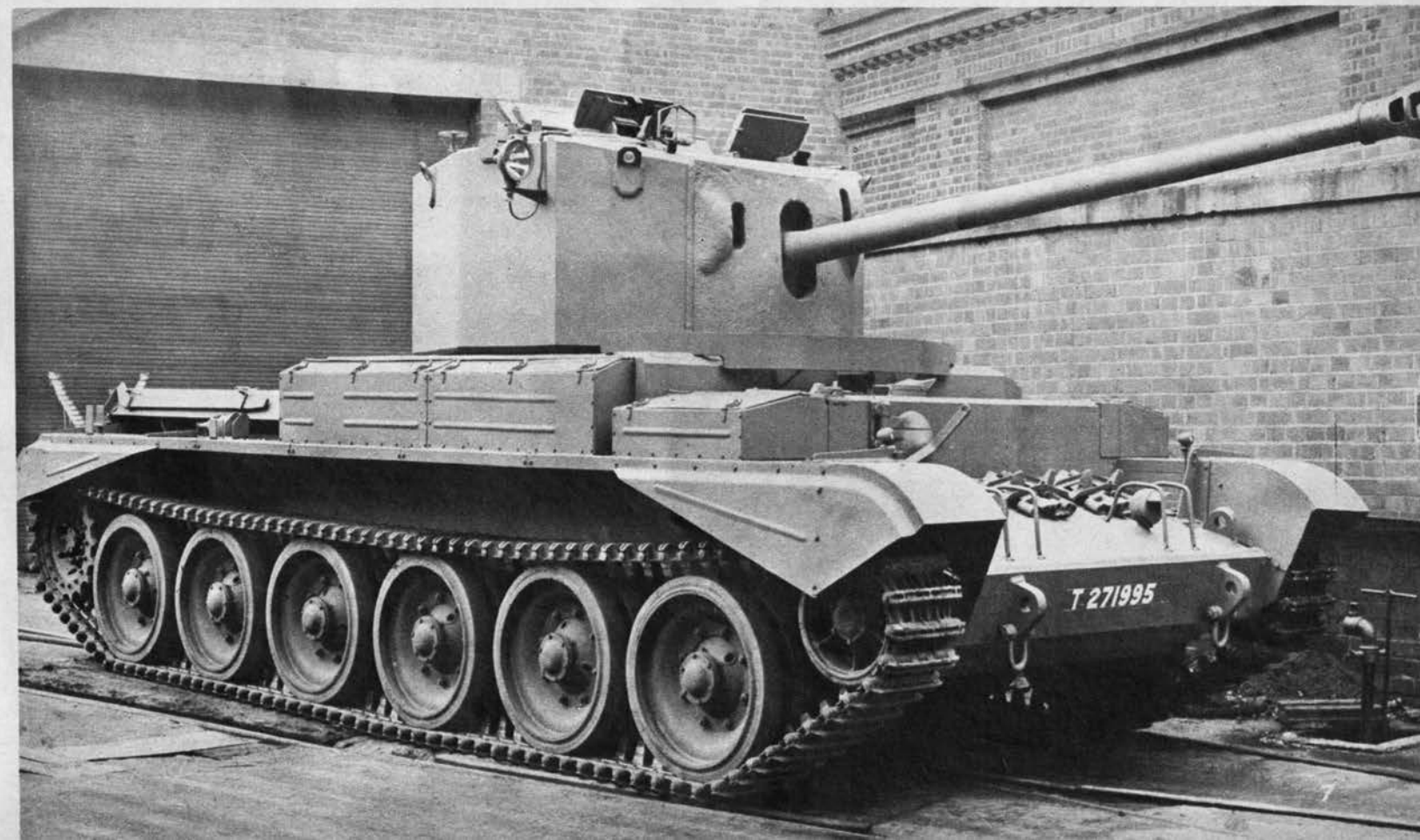
COMET AND CHALLENGER

In action with Britain's armored units are two new tanks, the Comet (*above*) and the Challenger. Placed by the British in the "cruiser" class, these vehicles are in the same weight and armament category as the U. S. M-4.

Resembling each other in hull design, the new tanks differ in main armament and turret shape. The Challenger's tur-

ret has angular sides like the Cromwell, mounts a high-velocity 17-pounder. With this gun and a top speed of 32 m.p.h., the Challenger is primarily for use in antitank roles. The welded and cast turret on the Comet, with its gun mantlet, large cupola and rear overhang, represents something new in British design. The gun, shorter than the Challenger's, is a 77.

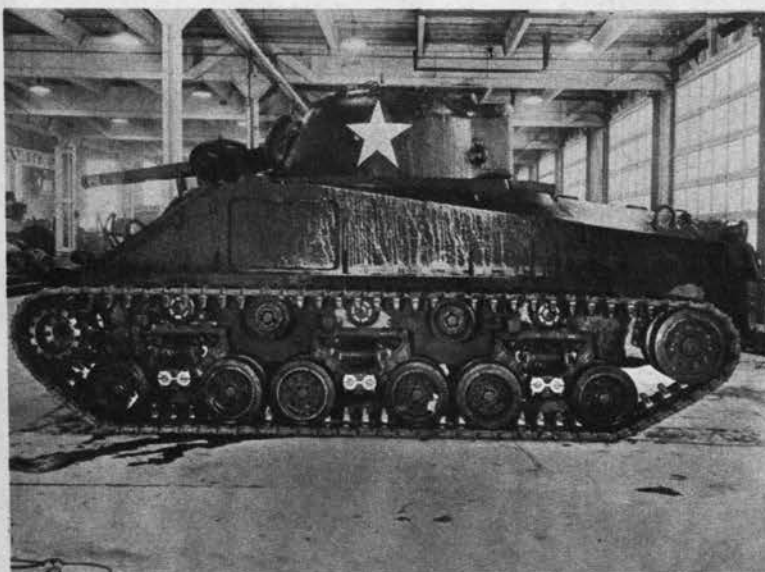
CHALLENGER'S ANGULAR TURRET AND BOW SHOW CROMWELL ANCESTRY. THE CHALLENGER IS 30 IN. LONGER, HAS ONE MORE BOGIE, BIGGER GUN





T-34 rocket launchers perch high above Sherman tank turrets as their 60 tubes guide projectiles against German positions. Supported by ver-

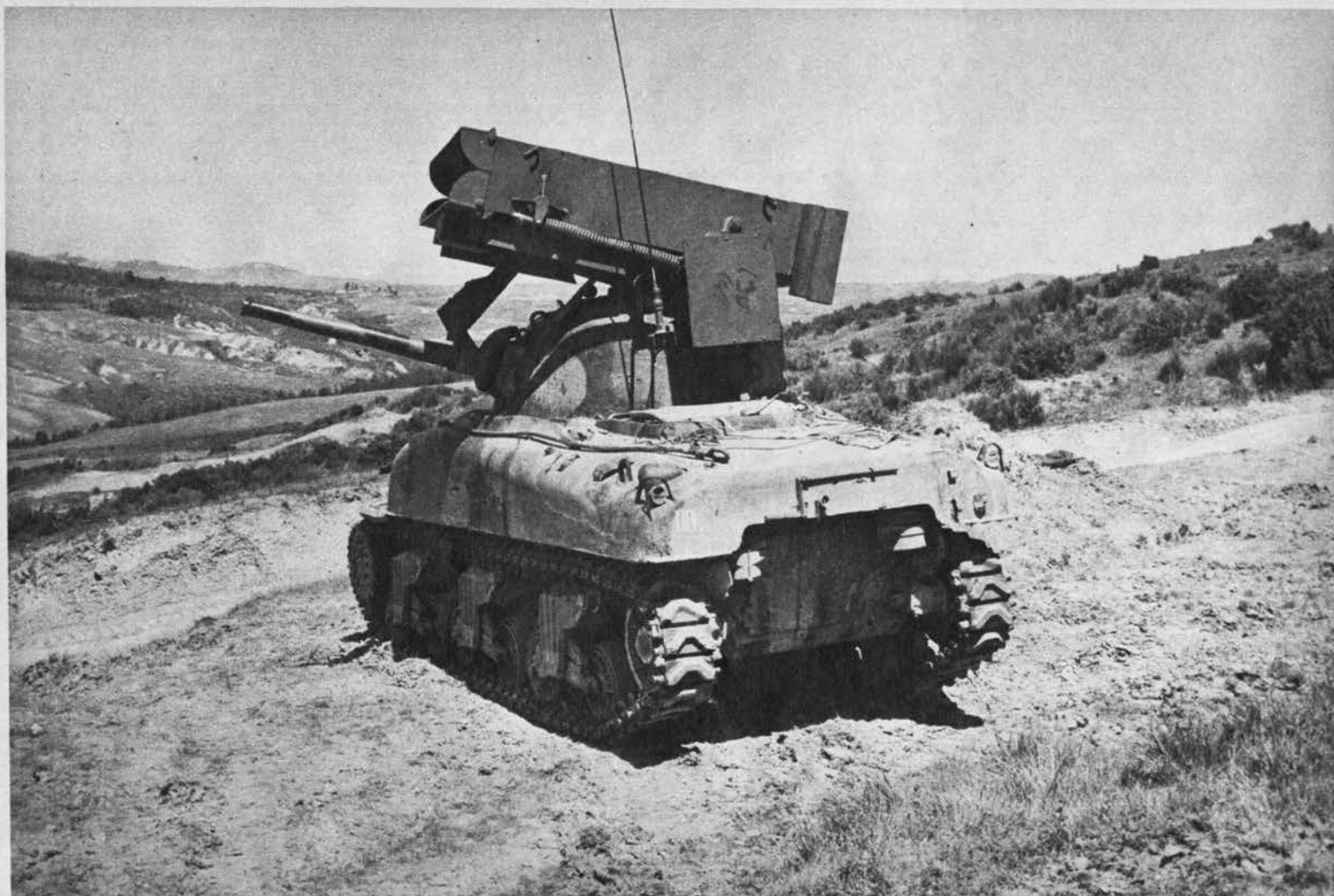
tical girders, the T-34 or "Calliope" has two layers of tubes with two banks each. Entire launcher can be jettisoned from inside the tank.



New running gear for M-4 has three small and two large return rollers, horizontal volute spring suspension for its six paired bogie wheels.



Grousers attached to M-4 track with spaced-out suspension give it over twice standard width, improve performance on marshy terrain.



BOXY M-17 "WHIZBANG" SITS MUCH LOWER OVER TURRET THAN T-34 (OPPOSITE). IT HAS 20 SETS OF GUIDING RAILS IN TWO BANKS OF TEN EACH

THREE ARMOR VARIATIONS

Changes improve U. S. vehicles

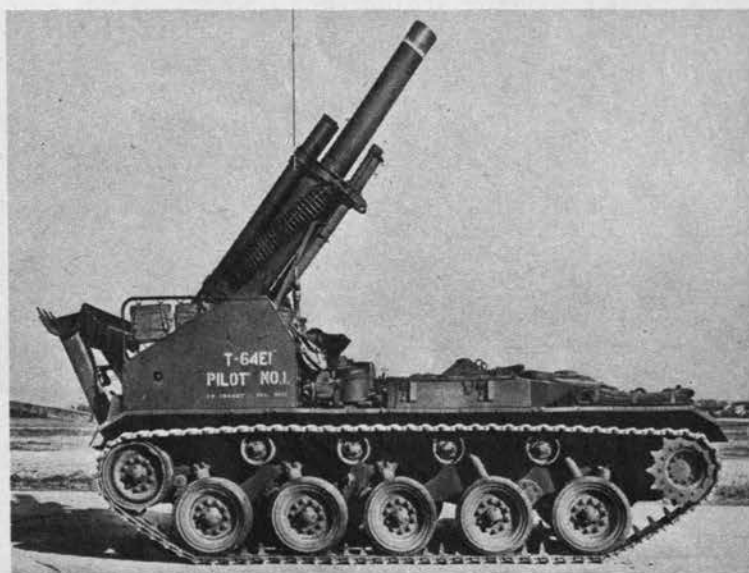
Now in combat with U. S. forces is a profusion of rocket-launching equipment which can be mounted on tanks, trucks and landing vehicles. Light, yet able to throw withering barrages, the T-34 and M-17 rocket launchers shown here were designed for use on M-4 tanks. However, certain adaptable U. S. rocket launchers may be seen on any vehicle. Because of this lack of standardization, men in forward areas must know the launching devices themselves as

well as their rocket-vehicle combinations.

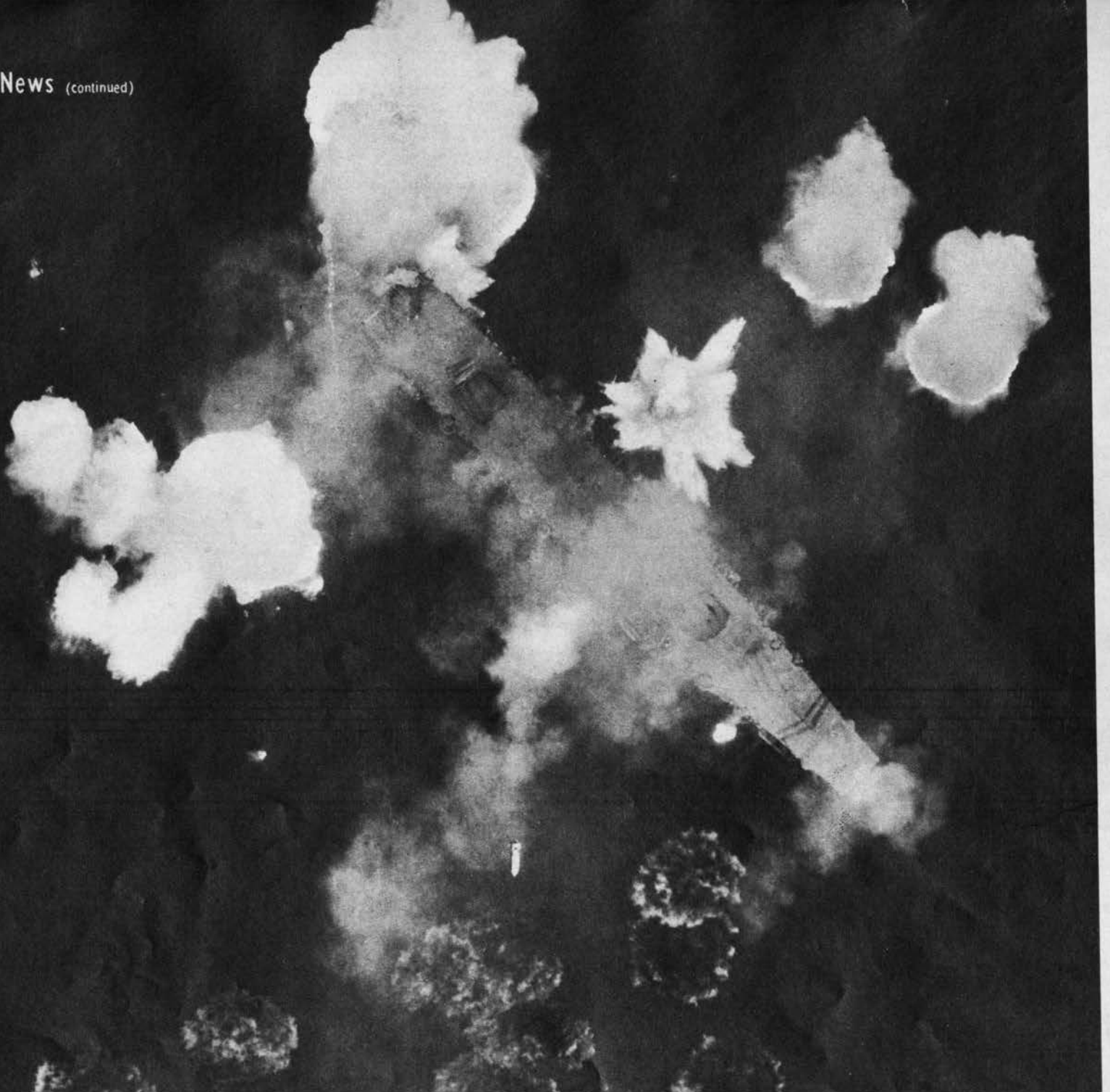
Other developments include improvements on the M-4 running gear (*below, left*) as well as the adaptation of the M-24 light tank chassis (*bottom of page*) for two SP guns. As a stopgap, grouzers have been installed on M-4's to widen their tracks. A more permanent change is the horizontal volute suspension. To be built into all new vehicles having M-4 chassis, it carries wider tracks, gives better performance.



New Priest, M-37, has 105-mm. howitzer and superstructure similar to the M-7. M-24's torsion-bar suspension is chief recognitional change.



Another gun to get M-24 chassis is the 155-mm. howitzer. New combination is the T-64E1. The spade at rear is lowered prior to firing.



BOMB HURTLES TOWARDS AN UNRYU CLASS CV ALREADY STRADDLED BY A SCORE OF NEAR MISSES. NOTE FORWARD TAPER OF FLIGHT DECK



Unryu Class CV (left) has small island forward on starboard side. Island rises outboard of flight deck in typical Jap style. CVE (right) is probably converted from merchant hull.

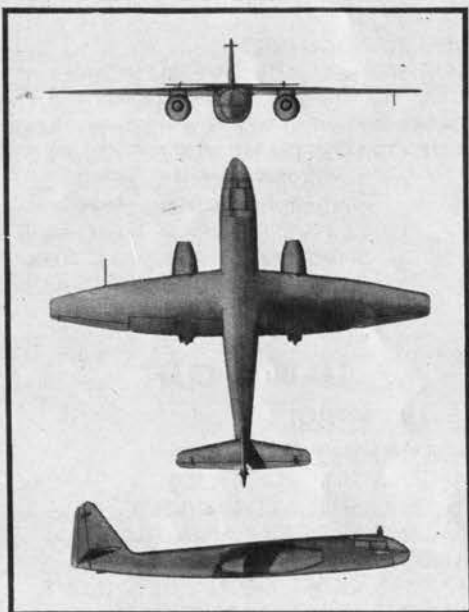
JAP CARRIERS

Last month, in powerful strikes against the anchorages of Japan's Inland Sea, the U.S. fleet gave Japan's new carriers a damaging baptism of fire. As a dramatic sequel to shipyard reconnaissance views (see April *Journal*), combat pictures from this attack point up Japan's stubborn efforts to restore her carrier strength. A few new CV's have joined the fleet, with more fitting out or on the ways, while an energetic conversion program is turning out merchant-hull CVE's for escort duty.

The large fleet carrier shown in both pictures is a unit of the new Unryu Class. Believed to be about 730 feet long, it has a rectangular yet somewhat tapered flight deck fringed with a heavy array of AA gun positions. An extension seen on the port side of the after flight deck may be a stack.



ARADO 234, NEW GERMAN JET, HAS LONG, SMOOTH LINES. NACELLES, CLEAN FUSELAGE HANG FROM HIGH WING. TAILPLANE IS TRIANGULAR



NEW GERMAN WARPLANES

Beaten Luftwaffe remains active in field of jet propulsion

As German arms crumble on all fronts, the enemy continues his efforts to produce a "wonder weapon" that will turn the tide or at least shore up Nazi morale. Thus the Luftwaffe has thrown much of its waning energy into the development of jet- and rocket-propelled warplanes—the Me-262, Arado 234, and Me-163.

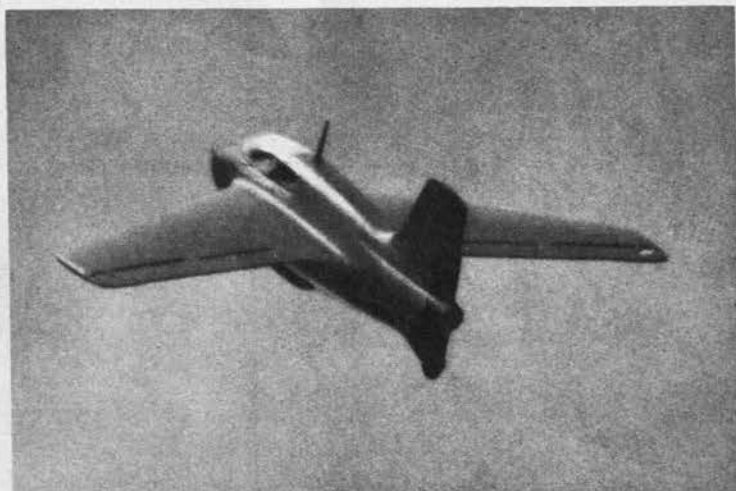
For some months we have encountered the two Messerschmitts (*below*), but the Arado 234 (*above and left*) is a

significant new arrival. It reportedly exists in three versions—fighter, bomber and recco plane. The fighter model has attacked our bombers in recent weeks.

With a span of 47 feet, four inches and length of 41 feet, seven inches, the Ar-234 is large and heavy for a single-seater. When mounted, guns probably include at least four 30-mm. cannon. As a bomber, it carries a maximum load of about 3,300 lb. Speed approaches 500 m.p.h.



Twin-jet Me-262 has swept-back wing of irregular shape. Jet units are large and underslung. Sleek fuselage has long, pointed snout.



Me-163 interceptor flies at terrific speed on thrust of liquid fuel rocket. Short flight duration limits its usefulness. It has no tailplane.

WARSHIPS RECOGNITION TRAINING LIST ~~RESTRICTED~~

ON THIS REVISED TRAINING LIST, WARSHIPS ARE NO LONGER DIVIDED INTO CLASS A AND CLASS B. THE DIFFERENT CLASSES WITHIN THE TYPE CATEGORY ARE NOW LISTED IN THE ORDER OF THEIR IMPORTANCE; I.e., IOWA CLASS HEADS THE ROSTER OF U. S. BB'S AND ARKANSAS IS LAST.

SIMILAR DESTROYER CLASSES ARE GROUPED TOGETHER WITH THE FIRST CLASS NAME UNDERSCORED TO INDICATE THE GROUP OR RECOGNITION NAME FOR THE LOT. THE UNRYU CLASS (NEW JAPANESE CV) IS NOT LISTED BECAUSE OF THE LACK OF ADEQUATE PICTORIAL COVERAGE AT THIS TIME.

UNITED STATES

BATTLESHIPS (BB)

IOWA CLASS
SOUTH DAKOTA CLASS
NORTH CAROLINA CLASS
TENNESSEE CLASS
NEW MEXICO CLASS
COLORADO CLASS
PENNSYLVANIA
NEVADA
NEW YORK CLASS—ARKANSAS

LARGE CRUISERS (CB)

ALASKA CLASS

AIRCRAFT CARRIERS (CV)

ESSEX CLASS
ENTERPRISE
SARATOGA
RANGER

AIRCRAFT CARRIERS, LIGHT (CVL)

INDEPENDENCE CLASS

AIRCRAFT CARRIERS, ESCORT (CVE)

CVE (BOGUE—SANGAMON—CASA-
BLANCA—COMMENCEMENT BAY
CLASSES)

HEAVY CRUISERS (CA)

BALTIMORE CLASS
NORTHAMPTON—PORTLAND—
PENSACOLA CLASSES
NEW ORLEANS CLASS
WICHITA

LIGHT CRUISERS (CL)

CLEVELAND CLASS
BROOKLYN CLASS—ST. LOUIS
ATLANTA—OAKLAND CLASS
OMAHA CLASS

DESTROYERS (DD)

FLETCHER—SUMNER CLASSES
BENSON—LIVERMORE—MAHAN—
DUNLAP—PORTER—FARRAGUT
CLASSES
GRIDLEY—BAGLEY—BENHAM—SIMS—
SOMERS CLASSES

SUBMARINES

BALAO CLASS

BRITISH

BATTLESHIPS (BB)

KING GEORGE V CLASS
QUEEN ELIZABETH—VALIANT—WAR-
SPIE
NELSON CLASS
RENOWN
ROYAL SOVEREIGN CLASS—MALAYA

AIRCRAFT CARRIERS (CV)

ILLUSTRIOUS—IMPLACABLE CLASSES—
INDOMITABLE

AIRCRAFT CARRIERS, LIGHT (CVL)

UNICORN

AIRCRAFT CARRIERS, ESCORT (CVE)

CVE (BATTLER—NAIRANA CLASSES—
ACTIVITY—PRETORIA CASTLE)

HEAVY CRUISERS (CA)

KENT—DEVONSHIRE CLASSES—NORFOLK
LONDON

LIGHT CRUISERS (CL)

DIDO CLASS
FIJI—SOUTHAMPTON CLASSES*
LEANDER CLASS
BELFAST
ARETHUSA CLASS—HOBART
ADELAIDE
EMERALD

DESTROYERS (DD)

"J" TO "Z" CLASSES
"A" TO "I"—WALLACE—DOUGLAS—
SAGUENAY—CODRINGTON CLASSES
TRIBAL CLASS
"V" TO "W"—WAIRS CLASSES

SUBMARINES

TRITON CLASS
1940 "S" CLASS
UNITY CLASS

JAPANESE

BATTLESHIPS (BB)

NAGATO
ISE CLASS**
KONGO CLASS

AIRCRAFT CARRIERS (CV)

HAYATAKA CLASS

AIRCRAFT CARRIERS, LIGHT (CVL)

ZUIHO CLASS
HOSHO

AIRCRAFT CARRIERS, ESCORT (CVE)

OTAKA CLASS—KAIYO

HEAVY CRUISERS (CA)

NACHI—AOBA CLASSES
ATAGO CLASS
TONE CLASS

LIGHT CRUISERS (CL)

KUMA—NATORI CLASSES
AGANO CLASS
OYODO

DESTROYERS (DD)

FUBUKI—HATSU HARU—ASASHIO—
TAKANAMI—MATSU CLASSES
TERUTSUKI CLASS
MUTSUKI—KAMIKAZE—MINEKAZE—
WAKATAKE CLASSES

SUBMARINES

I-15
I-168
RO-100

FRENCH

BATTLESHIPS (BB)

RICHELIEU

LIGHT CRUISERS (CL)

LA GALISSONNIÈRE CLASS
EMILE BERTIN

DESTROYERS (DD)

LE FANTASQUE CLASS

OTHER TYPES

MERCHANT SHIP TYPES

TRANSPORT
FREIGHTER—TRANSPORT
FREIGHTER—(COMP. SUPERSTRUCTURE)
(SPLIT SUPERSTRUCTURE)
STACKS AFT—TANKER, CARGO, WHALER
NOTE (1): MERCHANT VESSELS OF ALL
NATIONS ARE INCLUDED
UNDER THE ABOVE TYPES
(2): CONVERSIONS OF MERCHANT
SHIPS USED AS NAVAL AUX-
ILIARIES ARE CLASSIFIED AS
MERCHANT SHIPS

LANDING CRAFT

U.S. AND BRITISH

LANDING SHIP, TANK (LST)
LANDING SHIP, DOCK (LSD)
LANDING SHIP, MEDIUM (LSM)
LANDING CRAFT, INFANTRY (LCI)
LANDING CRAFT, TANK (LCT)
LANDING CRAFT, MECHANIZED (LCM)
LANDING CRAFT, SUPPORT (LCS)
LANDING CRAFT, CONTROL (LCC)
LANDING CRAFT, VEHICLE AND
PERSONNEL (LCVP)
LANDING VEHICLE, TRACKED AND
LANDING VEHICLE, TRACKED
(ARMORED) (LVT AND LVT(A))
DUKW—2½-TON AMPHIBIAN TRUCK
NOTE: BRITISH HAVE NUMEROUS ADDI-
TIONAL MINOR VARIATIONS OF
BASIC TYPES

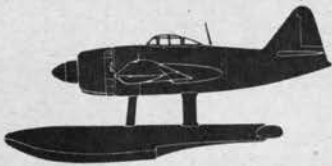
JAPANESE

TYPE A	TYPE E
TYPE B	TYPE F
TYPE C	LST
TYPE D	TYPE H

*INCLUDES UGANDA AND SWIFTSURE
CLASSES

**ISE CLASS HAS BEEN REFITTED WITH
FLIGHT DECK FOR 25 PLANES.

NEW AND REVISED AIRPLANE SILHOUETTES



REX 11

SPAN 39 FT. 5 IN. LENGTH 35 FT. 5 IN.
JAP FLOATPLANE FIGHTER (PROVISIONAL)



GRACE 11

SPAN 47 FT. 3 IN. LENGTH 37 FT. 7 IN.
JAPANESE TORPEDO BOMBER (PROVISIONAL)

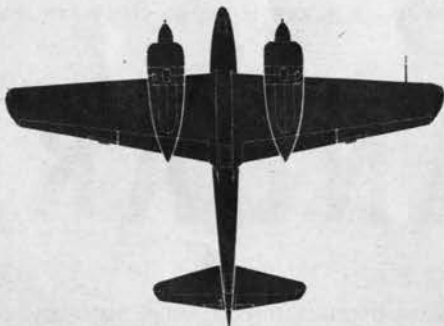


NORM 11

SPAN 45 FT. 11 IN. LENGTH 38 FT. 2 IN.
JAP FLOAT RECONNAISSANCE (PROVISIONAL)

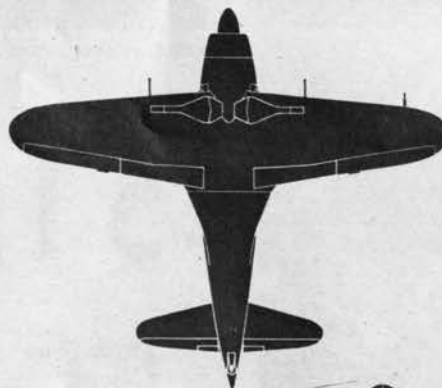
Japanese navy planes silhouetted above include Rex, a new fast floatplane fighter which is fundamentally similar to the land-based George. Grace 11, latest enemy torpedo bomber, has a mid inverted

gull wing, long greenhouse, triangular shaped fin and rudder. Single float, retractable wing floats and heavy streamlined strut distinguish Norm 11, the Japanese navy's new high-speed reconnaissance plane.



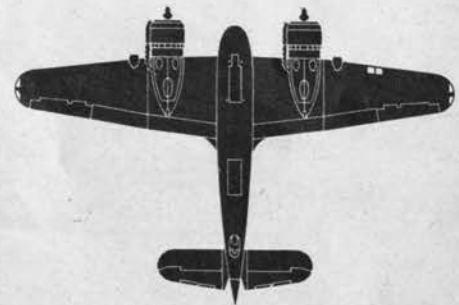
DINAH 3

SPAN 48 FT. 3 IN. LENGTH 36 FT. 1 IN.
NEW NOSE MARKS JAP ARMY RECCO PLANE



JACK 31

SPAN 35 FT. 4 IN. LENGTH 31 FT. 8 IN.
LATEST JACK VERSION HAS BUBBLE CANOPY

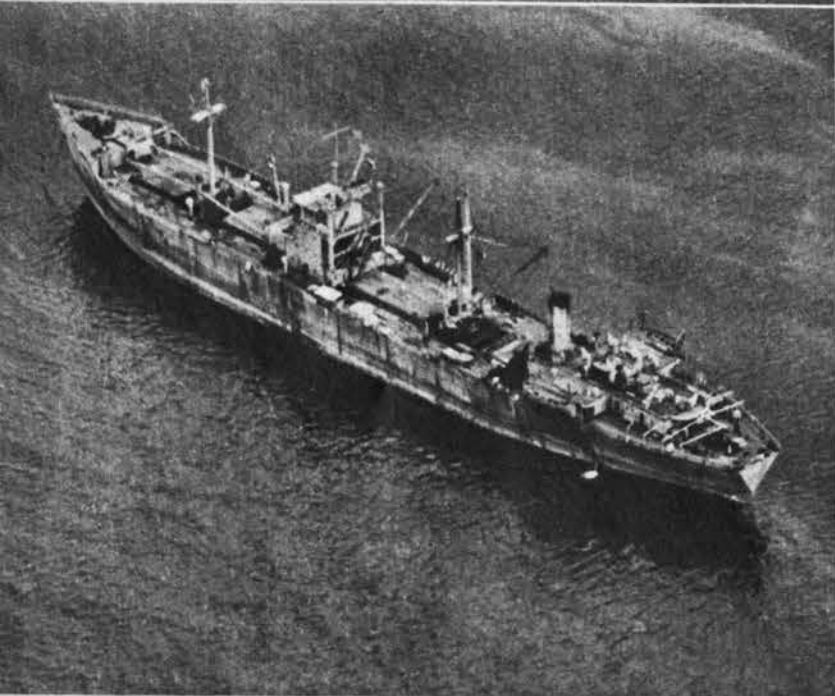
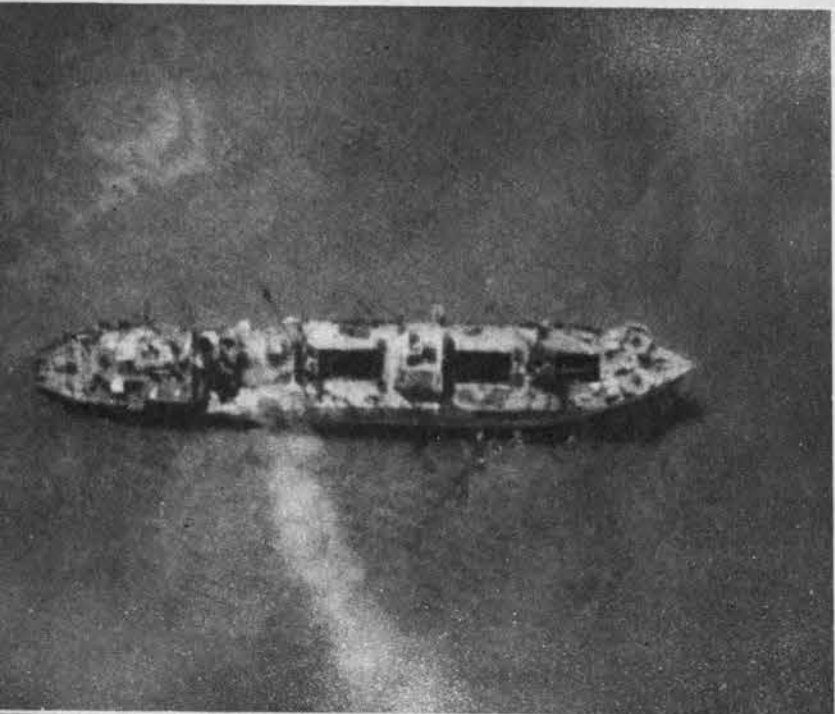


BEAUFIGHTER X

SPAN 57 FT. 10 IN. LENGTH 41 FT. 8 IN.
LONG DORSAL FIN ON RAF FIGHTER BOMBER

These three planes are all considerably different from their original versions. Dinah's long glass canopy now extends smoothly to the tip of the nose. A recent model of Jack, Japanese navy interceptor,

has appeared with a bubble canopy replacing the original faired cockpit. A prominent dorsal fin which fairs forward almost to the gun turret distinguishes latest Beaufighter X from all previous models.



Triangular bow, chopped-off stern mark Sugar Baker Love as an "economy" hull design. Sturdy masts, booms and big hatches indicate it is a large cargo vessel. Note four kingposts built into bridge.



KOBE AERIAL SHOWS TWO SUGAR BAKER LOVES ON THE WAYS, THREE MORE

FITTING OUT IN DRYDOCK AND AT DOCKSIDE (UPPER LEFT). SMALL "ECONOMY" HULLS (LOWER RIGHT) ARE SUGAR CHARLIE SUGARS (ABOUT 850 TONS)

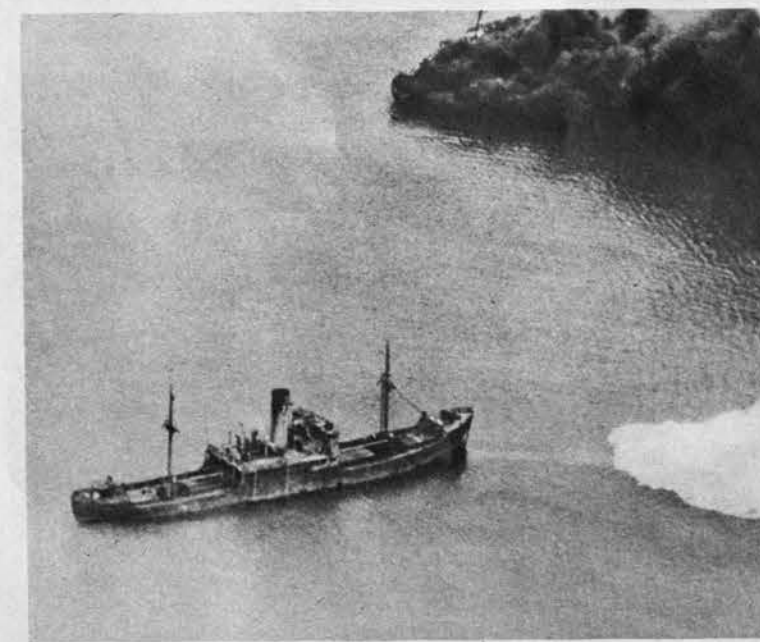
STANDARD JAP SHIPS

Three years of accelerating loss to U.S. submarines and aircraft have left Japan desperately short of merchant vessels. To meet the demand for replacements, Japan has concentrated all her merchant shipbuilding resources in a few standard designs. Roughly parallel to our Maritime Commission standardization, the Japanese program is probably as thoroughgoing and complete. During 1945, we can expect the types shown on these pages to make up the bulk of Japanese merchant shipping over 800 tons.

Like the USMC's ships, standard Japanese classes are very distinctive in appearance. Partly to avert bottlenecks in Japan's overworked industrial system, most of the ships are engines-aft design and powered by coal-burning rather than diesel engines. Speed in operation has been exchanged for speed in construction and for increased cargo capacity. Broad-beamed in relation to length, the most recent standard designs abound in straight

lines and flat surfaces. Sharply pointed bows and beveled sterns make for simplicity in building and give them an angular or "economy" hull shape that is easy to recognize from the air.

Standard cargo carriers are known in specialized manuals by single letters—Type A, Type C, etc.—while tankers are identified by the letter "T"—Type TM, Type TL, etc. However, all types have been coded in JMST and should be learned and reported according to this system. Certain earlier classes are simple but conventional designs, often dating from before the war, that have been built in quantity. The more recent and more important types are distinguished by the angular "economy" hull and sometimes have distinct JMST code names. Since both standard types are engines-aft, the cargo vessels somewhat resemble the tankers but they can usually be identified by their large hatches and array of heavy masts, kingposts and booms.

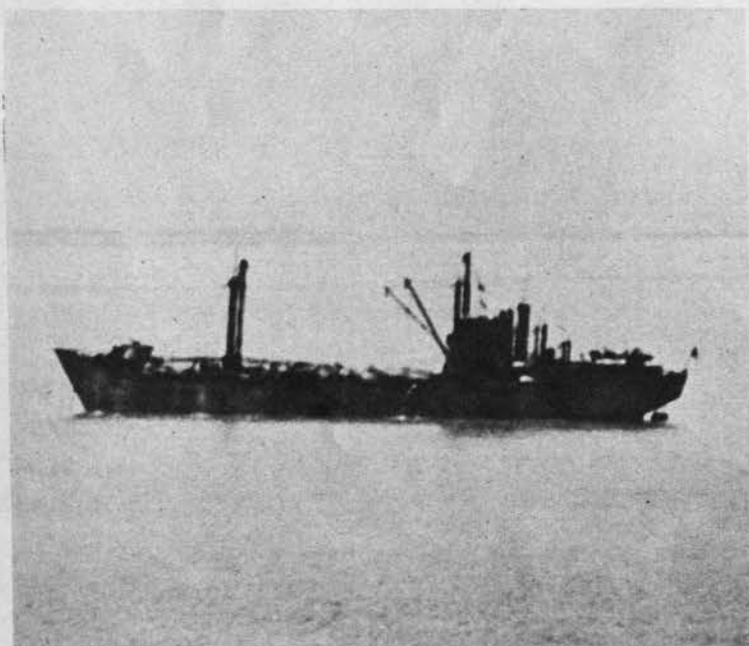


Prewar designed, Fox Tare Charlie has been built in quantity. It is one of two standard engines-amidships classes. Though not angular in hull shape, Fox Tare Charlie is simple in design, has lofty stack.



Stricken off Mindanao, small freighter (Sugar Baker Sugar) is shown with stern shattered and afire. A standard prewar coastal type, it is

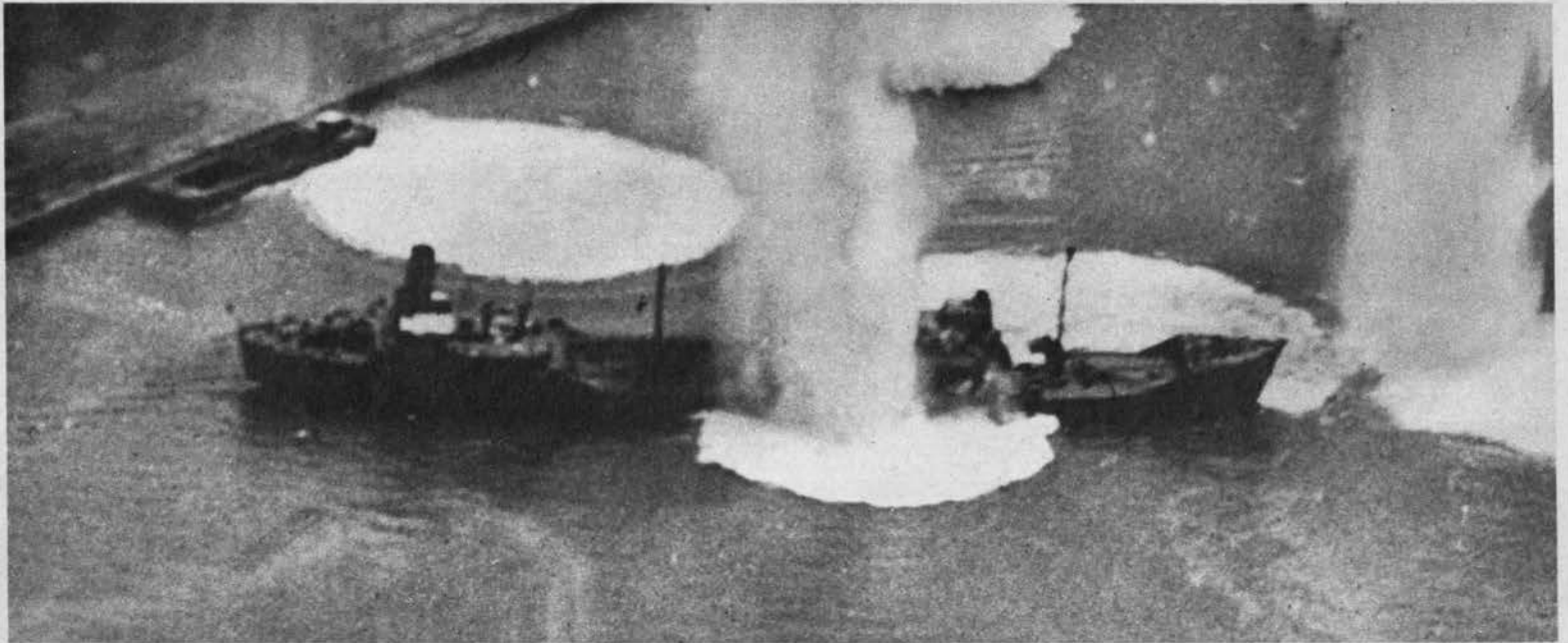
ancestor of "economy" Sugar Charlie Love. Heavy masts on poop and forecastle, kingposts behind forward bridge are outstanding features.



Sugar Charlie Love has bridge aft and lower stack. Bridge kingposts and heavy foremast help distinguish it from Sugar Able Sugar tanker.

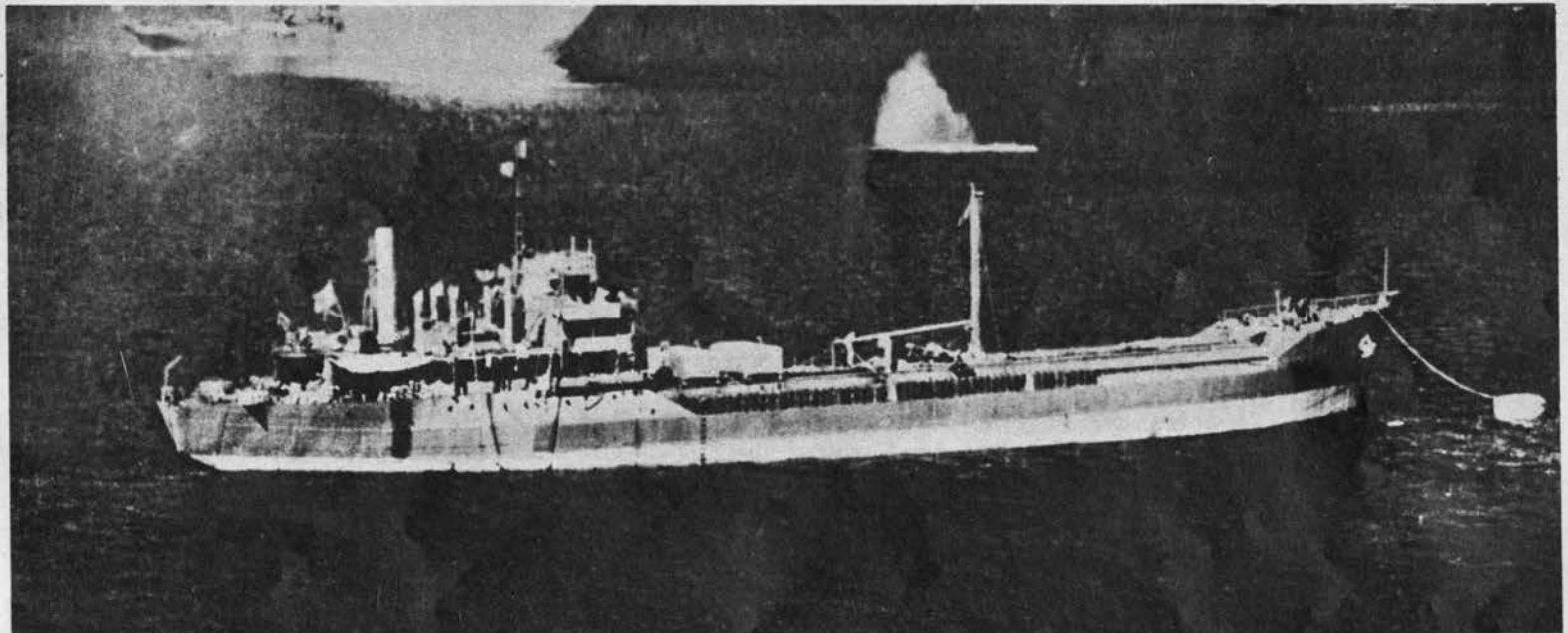


Broad beam gives Sugar Charlie Love clumsy appearance in oblique view. Note large mast with cluster of booms set in forward well deck.



Bomb-straddled tanker at Cebu dockside is coded Sugar Able Item. Note catwalk only between bridge and stern superstructure. Sugar

Able Item does not have extreme "economy" hull but it does show early stages of design simplification. Note somewhat flattened stern.



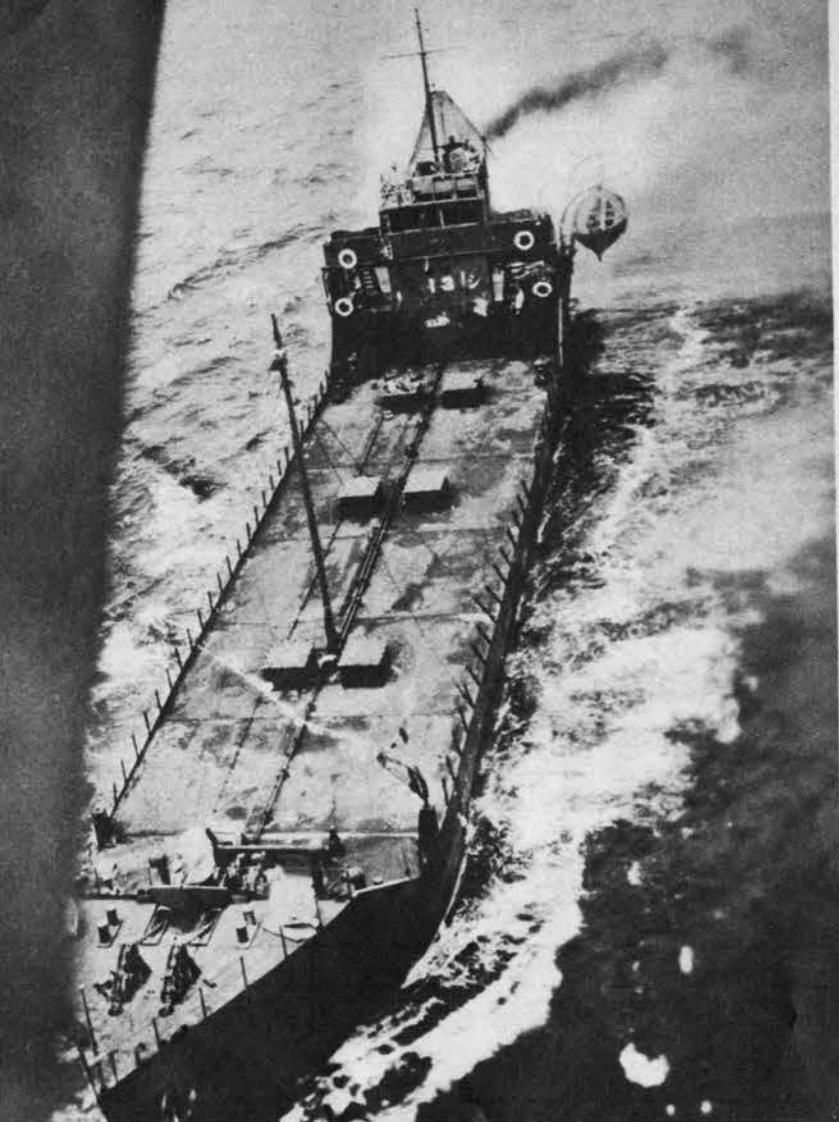
Raised forecastle, raked bow of small 2,800-ton tanker are characteristic of all recent standard Japanese classes. Classified as Sugar Able

Sugar, it lacks a catwalk but has tanker's trunked deck. The thin pipe stack is set well aft and its light mast rises almost amidships.



"Economy" hull, with sharply angled bow, narrow tapering stern, stands out in this view of Sugar Able Sugar. Note pairs of small vent

hatches along center line of the ship's deck. Tanker is carrying deck-load of automobiles, tractors and large crates along the starboard side.



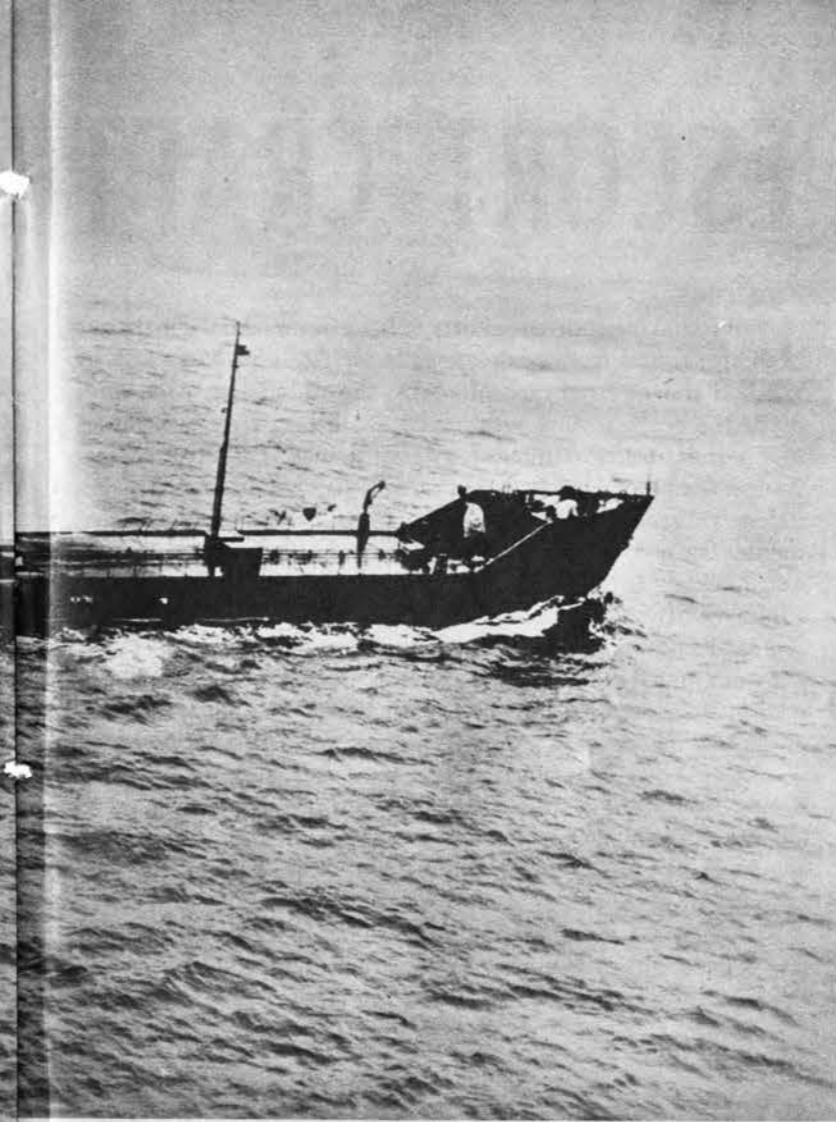
Combat close-up of 850-ton tanker (Sugar Able Sugar) shows square vent hatches. Note simple bridge, straight sides, abrupt lines of bow.

Attacking Helldiver swoops low over a large Sugar Able Love tanker trapped in its placid anchorage. Note light foremast set just abaft



Low silhouette is afforded by Sugar Able Sugar. It has sharply raised forecastle bow, faceted stern found on most of important standard

bridge. Displacing 10,000 tons, this type has a long hull riding low in the water, with a sharply pointed bow and a narrow tapering stern.



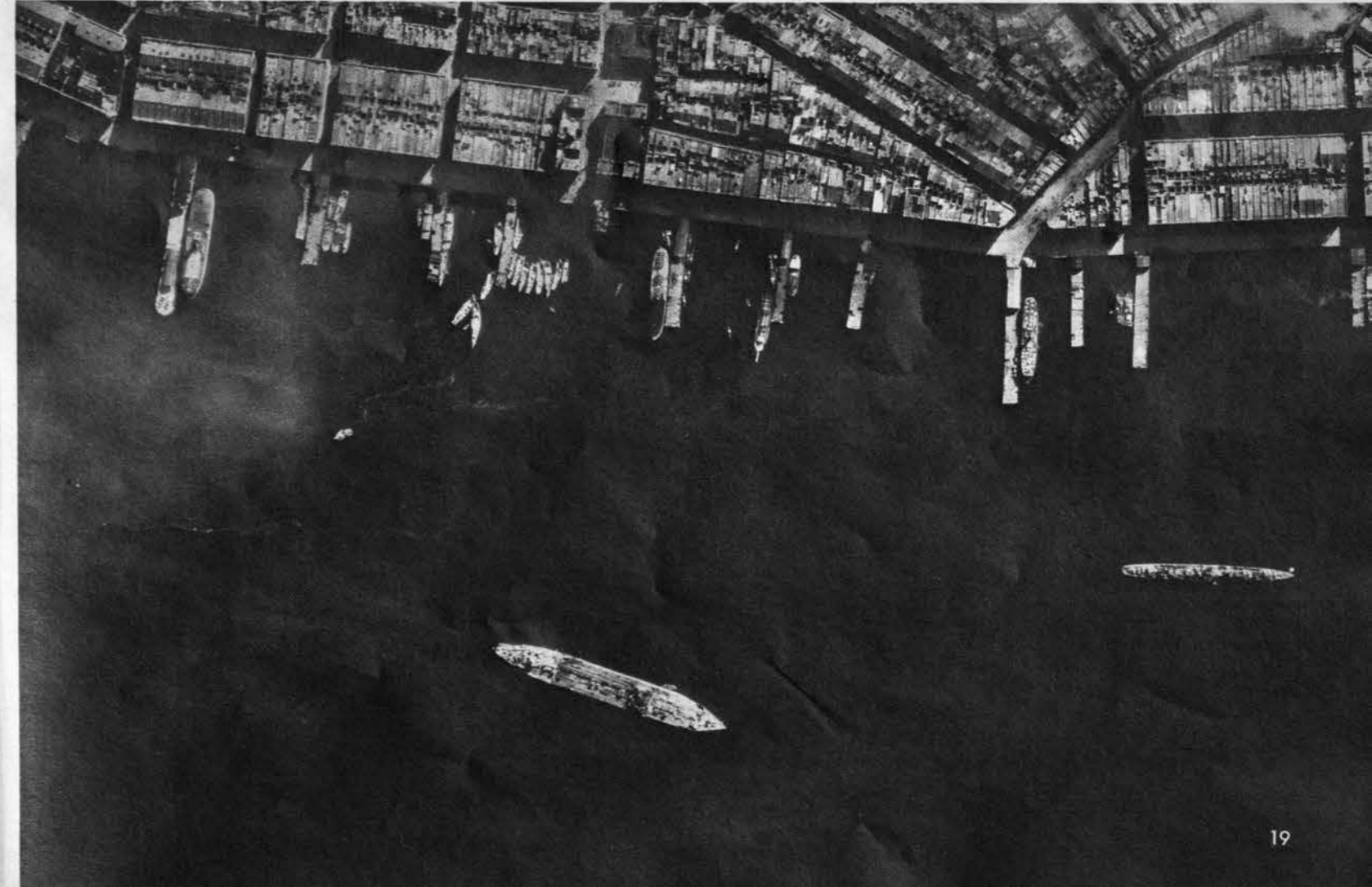
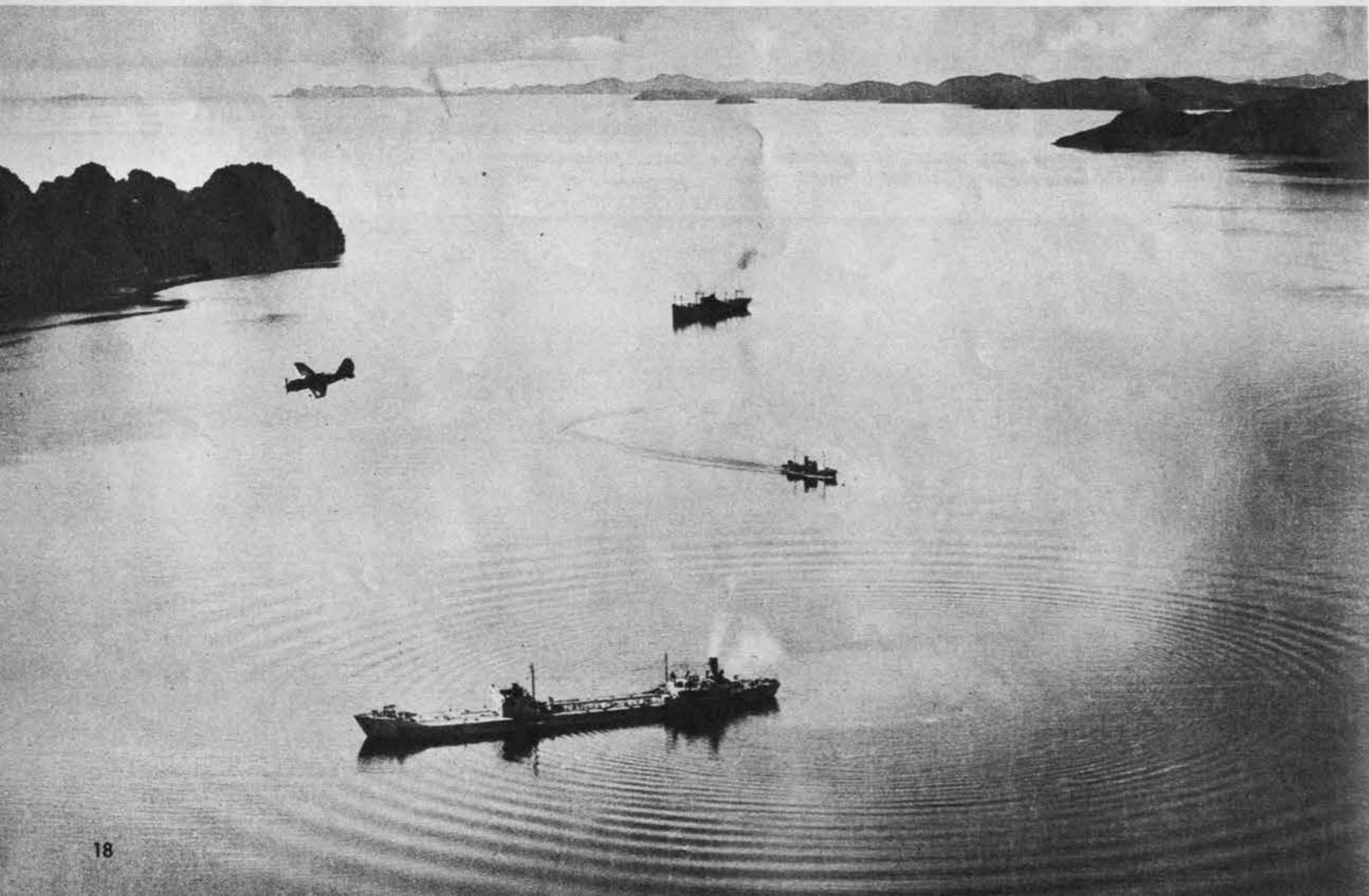
classes. Stack is brief diesel type. Note the two white-coated Japanese crewmen ducking behind after vent hatches to escape strafing burst.

Extended stern shows clearly in this reconnaissance photograph of a Sugar Able Love tanker moored off Hong Kong waterfront. It is the



Steam-powered Sugar Able Sugar can be spotted by its lofty stack, with mast set aft. It has trunked deck and customary small hatches.

largest of "economy"-hulled standard classes. Absence of hatches and catwalk aft distinguish it from large engines-aft cargo vessels.



ESCORT CRAFT OF JAP FLEET

Japan is making supreme efforts to keep her weakened maritime supply routes from complete collapse. Advance bases won by the U.S. during recent months bring the all-important sea lanes along the coast of Asia within easy reach of carrier task forces and permit steady marauding by submarines and patrol planes. As the tempo of merchant ship losses has heightened, Japan's defensive reaction has taken the form of increased replacements. On preceding pages is a survey of standard tankers and cargo vessels being turned out in quantity; on these pages is a summary of the subchasers, frigates, destroyer escorts.

Aerial reconnaissance shows important Jap shipyards pushing work on a flotilla of CVE's (*April Journal*, page 12) which are presumably intended for convoy escort rather than fleet support. Also on the ways are reinforcements for the fleet of minor combatants that is bearing the chief burden of defense at present. Seriously short of destroyers, Japan will probably put even more emphasis on small patrol and escort types during 1945. They can be built quickly and economically without putting severe pressure on large shipyards and specialized maritime industries.

Although the minor combatants are not as glamorous as the larger fleet units, they are of comparable importance recognitionwise. With the main Japanese fleet more restricted in its

operations, the majority of naval targets encountered by our forces will be in the smaller categories. In our sustained war against Japanese supply, the escort vessels are a much surer clue to the nationality of a questionable convoy than the merchant ships it includes. One of the characteristics of Jap combat ship design, scattered superstructure elements, is again apparent in these craft. Well armed with depth charges and flak, the DE's, frigates and subchasers are also a serious threat to the success of our antishipping campaign. Their striking power must be neutralized if U.S. submarines, fighters and bombers are to maintain their strangling pressure on the Japanese.

The Jap escort craft are a varied group and somewhat difficult to spot. Besides the types designed for escort operations, Japan has pressed gunboats and minesweepers into service as well as large trawlers and coastal craft. Thus the group ranges from destroyers of the small, simplified Matsu design (*left*) down to wooden subchasers of 100 tons displacement (*page 23*). However, the individual designs have distinctive features and, within general categories such as PC or PF, classes are frequently similar in appearance. Using the pictures available, the *Journal* presents on these and following pages a brief refresher on Japanese minor combatants, highlighting the principal escort types.



A low, simple profile characterizes Matsu Class, small DD's built in quantity for second-line duty. The second stack is abaft midships.

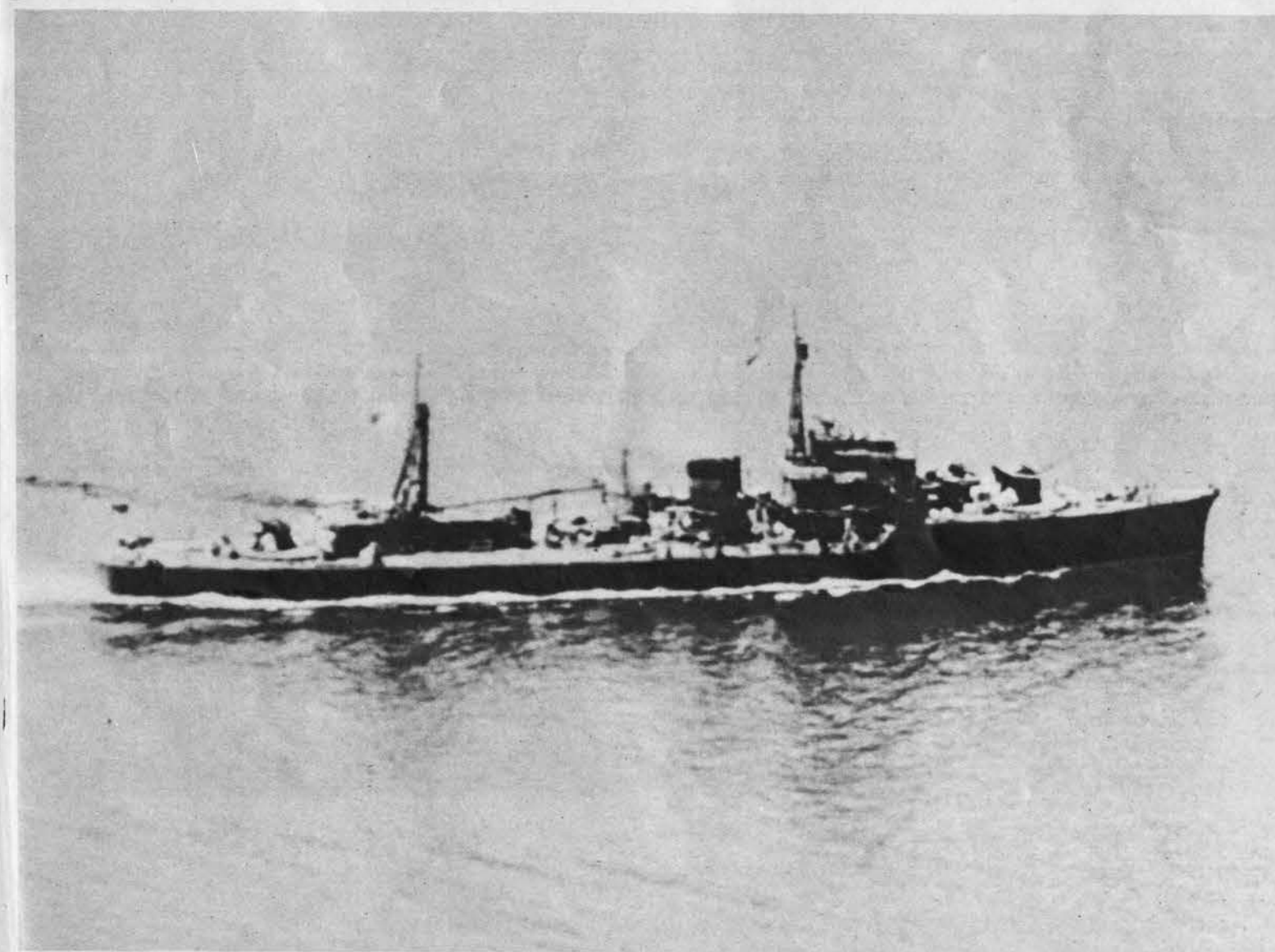


Torpedo boats of the Chidori-Otori Class are used as convoy guards. Light ships, the Chidoris have lean, swift lines. The bridge is low and

elementary in design. Small trunked, raked stack is set well forward, leaving the long afterdeck broken by torpedo mount and gun shields.

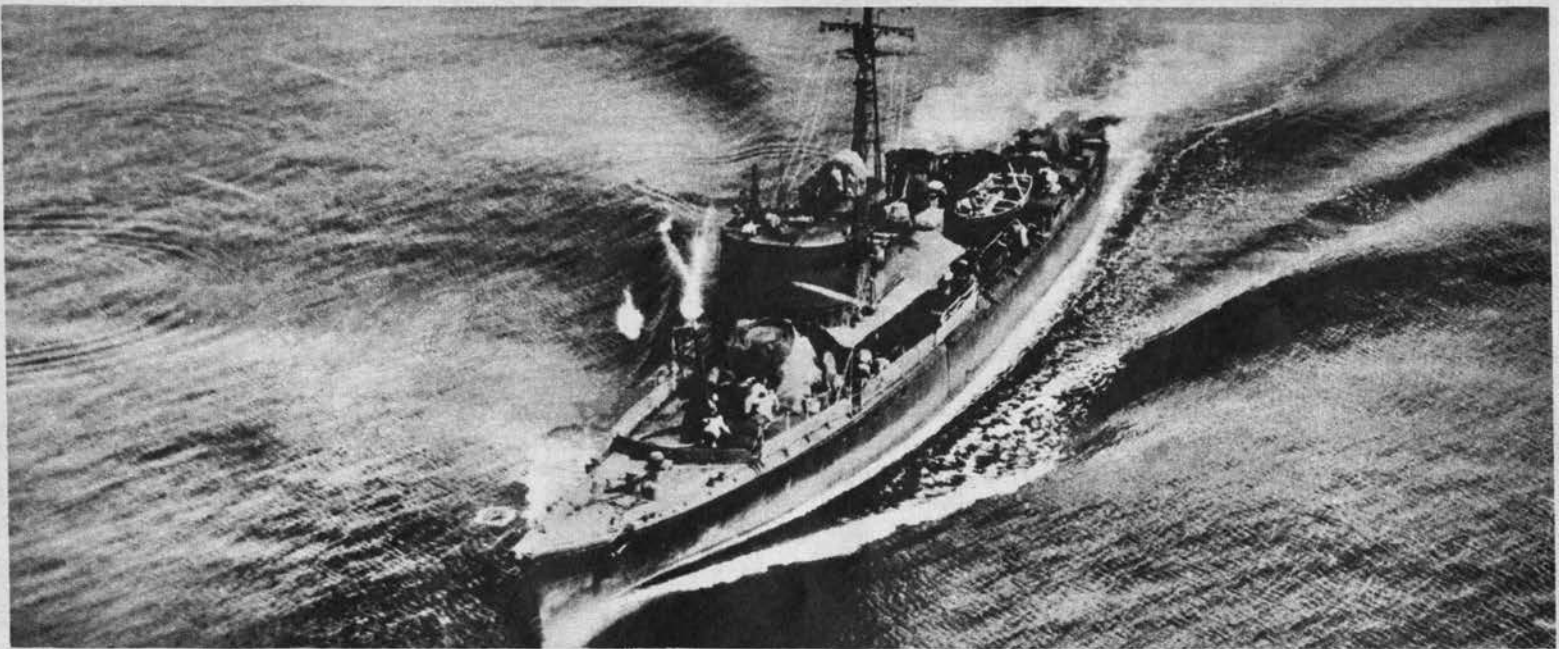


New destroyer escort is classified DE UN-1. Set well aft, stack is widely separated from the bridge structure which bristles with AA.



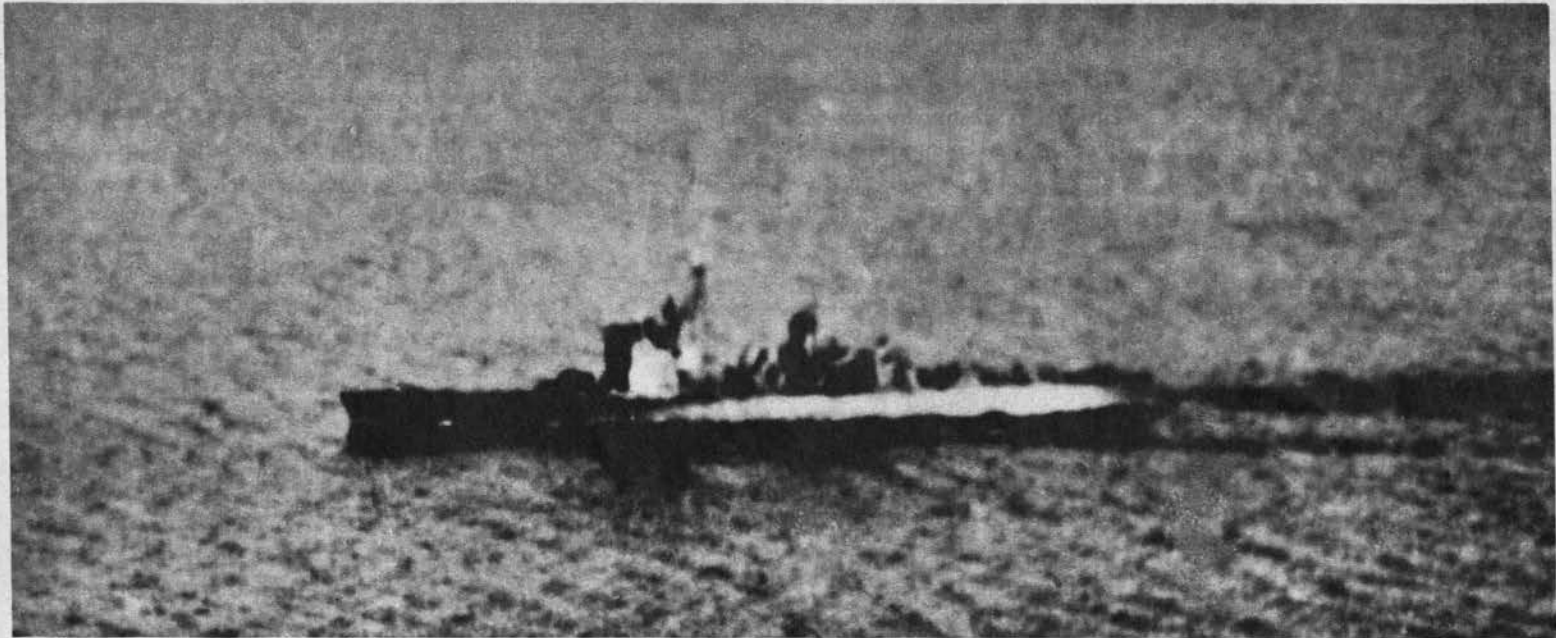
Sturdy frigate of Mikura Class has a broken deck, chunky bridge. The low stack is isolated, rising directly from the deck amidships. Note low

deckhouse around mainmast. Mikuras carry twin 4.7-in. guns at bow and stern, have tripod masts characteristic of minor Jap warships.



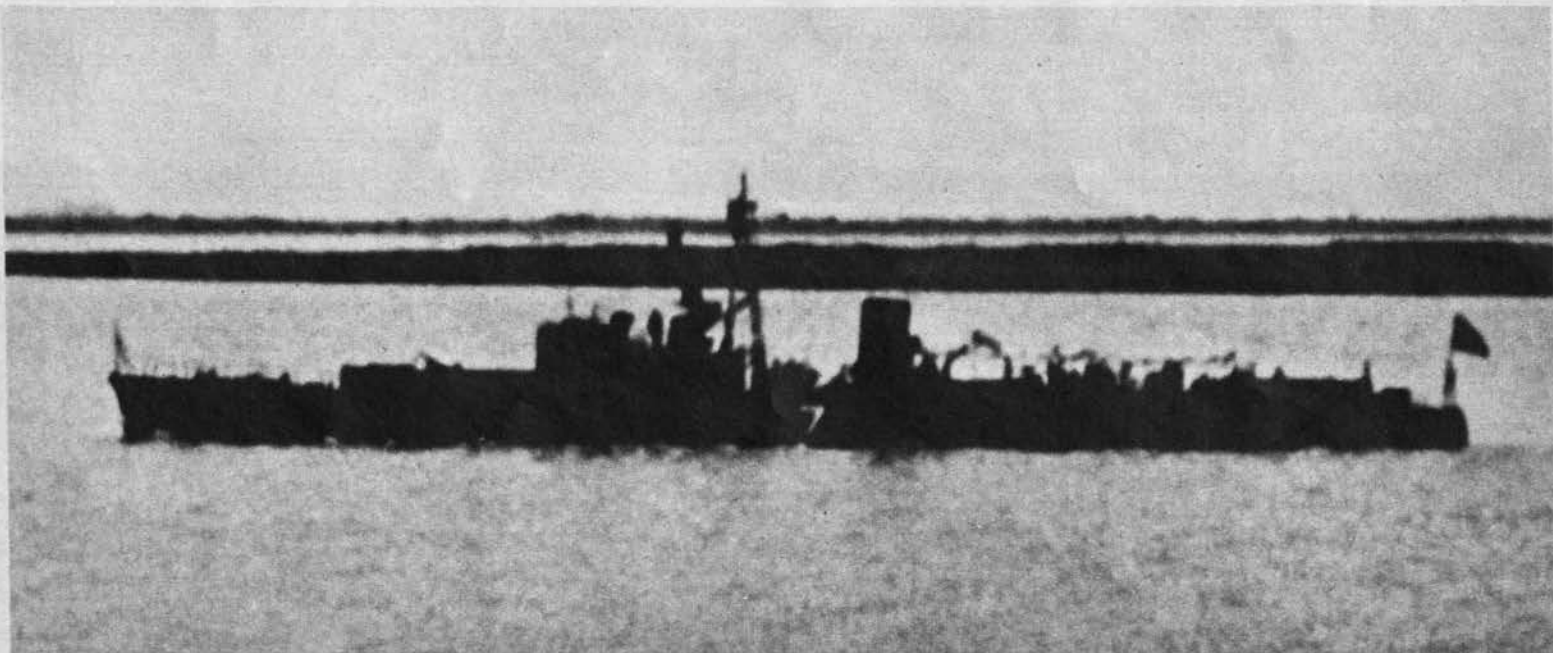
A graceful clipper bow is found on 168-ft. subchasers of the modern PC-13 Class. The bridge is smoothly rounded with a large searchlight

platform and tripod mast rising from the low deckhouse aft. Note the gun crew ducking away from the elevated 3-in. gun on the foredeck.



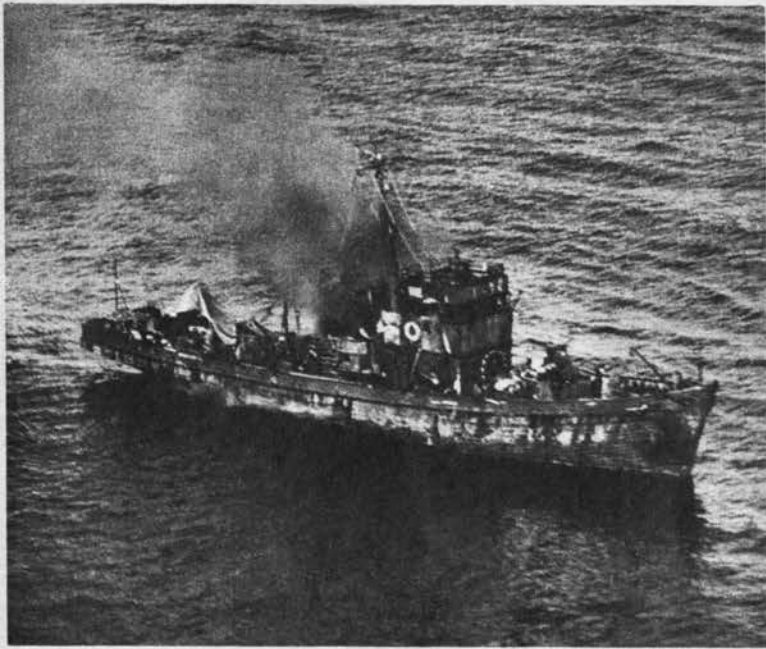
Low flush deck is basis for the design of PC-1 Class and other large Japanese subchasers. The superstructure rises abruptly from the deck

in isolated elements. The single stack is widely separated from the bridge and set slightly aft of amidships. Lifeboats are conspicuous abaft stack.



PC-4 Class subchaser is shorter than the PC-1 Class, has a higher and less extended profile. PC-4's have a low platform forward of the

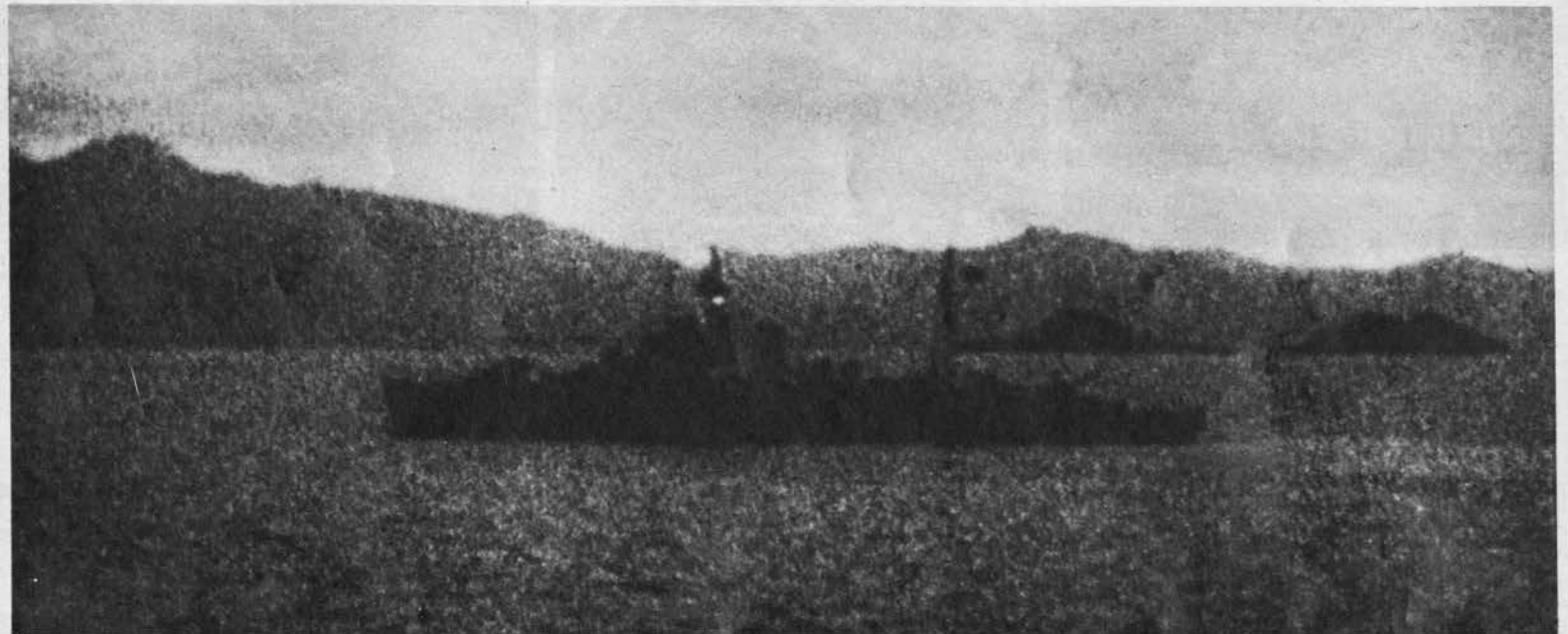
bridge. With the single exception of the well-designed PC-13 Class (*top*), all Jap subchasers mount only light anti-aircraft machine guns.



Wooden subchaser of SCS-1 Class is designed for quick, cheap construction. It resembles flimsy ocean tug with squared-off counter stern.

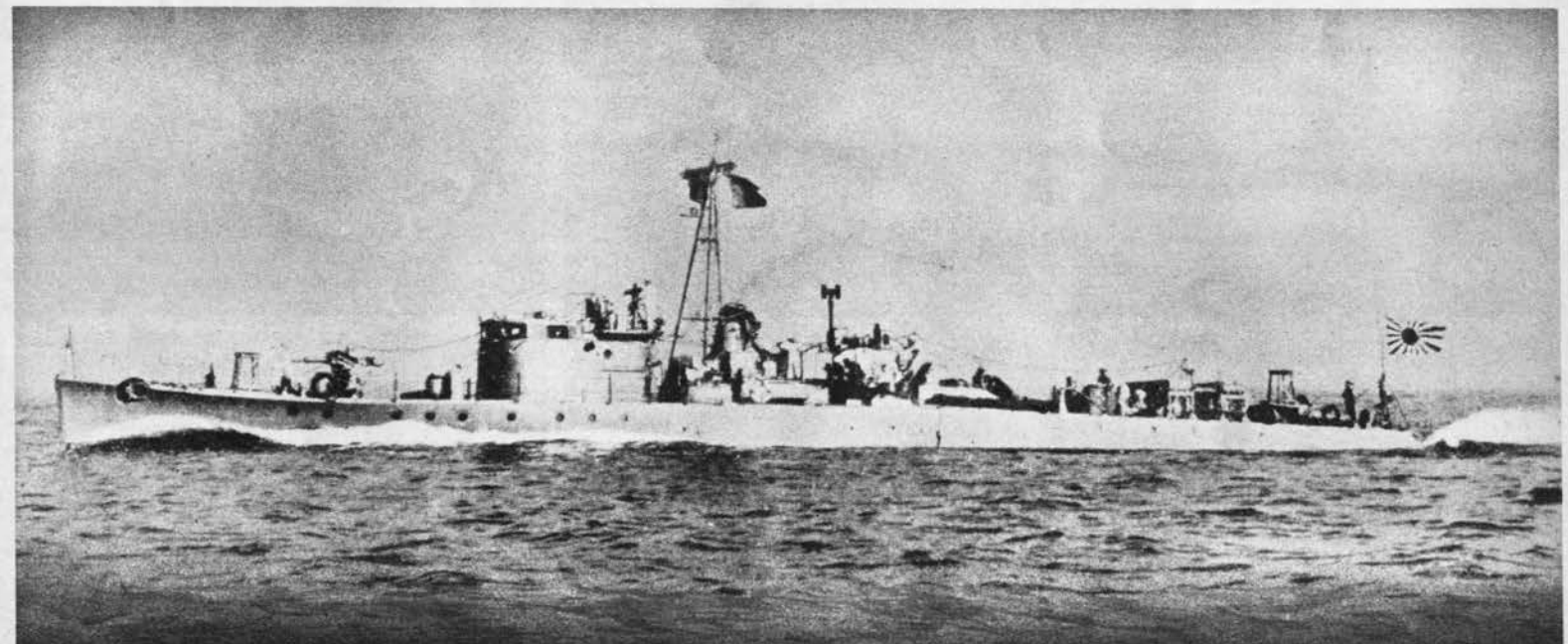


Fleeing SCS-1 carries load of depth charges, two chutes for dropping them at stern. Raked stack is set close behind ramshackle box bridge.



Hashidate Class gunboat has more complicated and fully developed superstructure than other Japanese escort vessels. Its deckline is

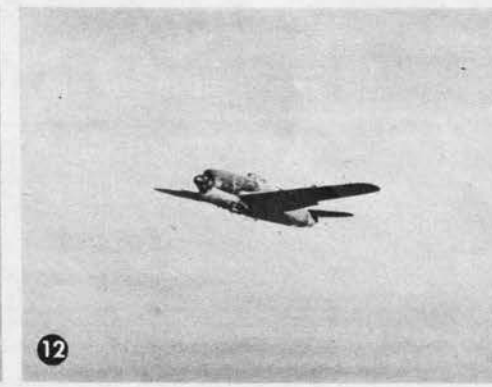
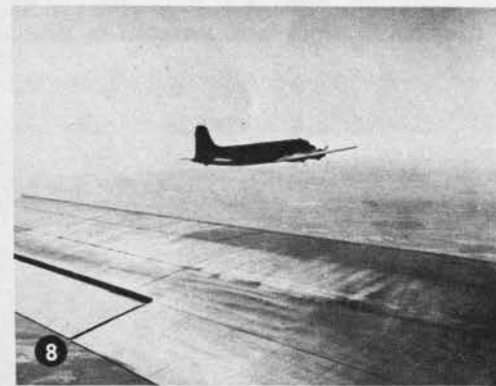
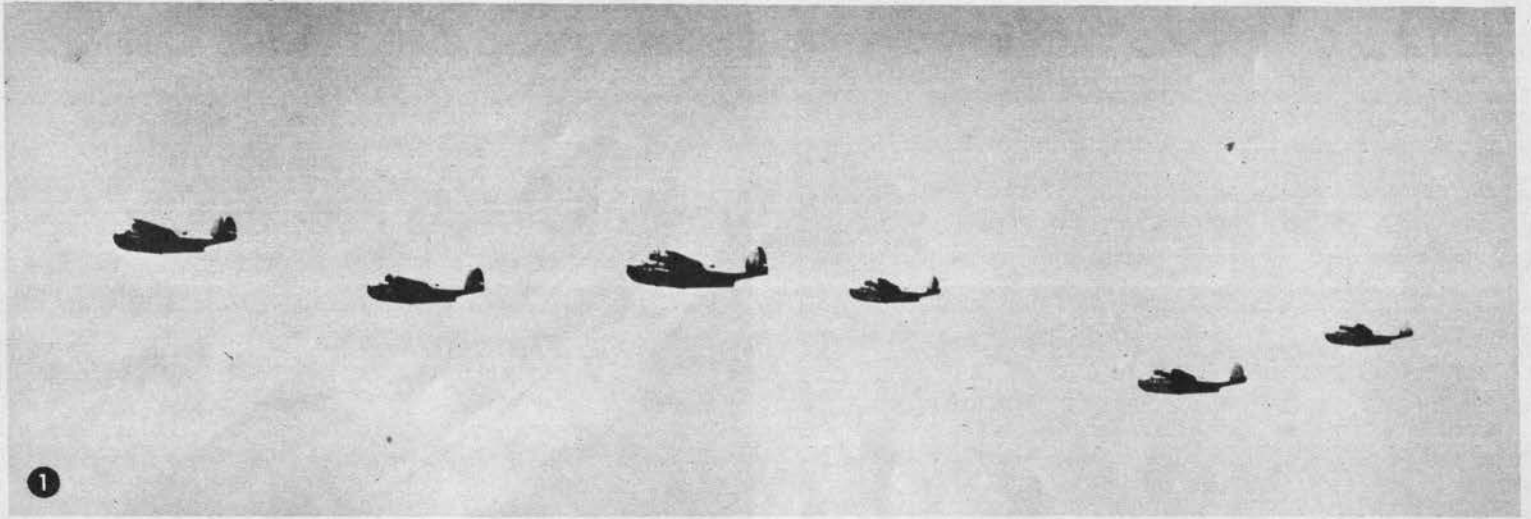
sharply broken just forward of the thin, single stack. Hashidates mount respectable armament of light AA in addition to three 4.7-in. guns.



Small SCS-51 Class resembles the larger PC's (*opposite page*) in overall design. Trunked, raked stack sits forward, and is partly straddled

by tripod mast. The deck slopes down toward the stern. SCS-51's are 146 ft. long, have been built in numbers before and during the war.

QUIZ NO. 2: IMPORTANT PACIFIC PLANES





ALREADY ACTIVE IN THE INDIAN OCEAN, THESE ROYAL NAVY BARRACUDAS SYMBOLIZE BRITISH AVIATION'S RETURN TO GLOBAL STRENGTH

BRITISH PLANES

ARRIVAL IN CENTRAL PACIFIC CREATES NEW RECOGNITION PROBLEM

On March 30, Pacific Fleet Headquarters announced that four days earlier a British task force had begun attacks against the Sakishima island group situated between Formosa and Okinawa. This means that British planes, already active in Australia and Burma, are now operating in the central Pacific alongside units of the U. S. Navy's Fifth Fleet.

While naval planes have been the spearhead for Britain's air power in this new theater, it is possible that they will eventually be followed by the fast fighters and husky, weight-carrying bombers of the Royal Air Force. It is naturally impossible to anticipate precisely which types will appear in which theaters. For this reason U. S. gunners and airmen will find it advisable to study carefully all of Great Britain's important aircraft as presented on the following ten pages.

In the 15 months since the *Journal* last reviewed the RAF, there have been, except for the jet-propelled Meteor, no startling changes in British plane design. Veteran aircraft, such as

the Stirling, Swordfish, Walrus and Fulmar, are no longer first line while new ones, Warwick, Tempest V, Tempest II, Firefly and Lincoln, have gone into production. But not one of these new airplanes fails to show a very close connection, in a recognition sense, to an older type. The Warwick is basically a Wellington; the Tempests differ little from the Typhoon; the Firefly shows pronounced Fulmar features and the Lincoln is almost indistinguishable from the Lancaster.

In aerial doctrine, however, there has been a somewhat greater change. Daylight sorties by British heavies are now commonplace, while night bombing, particularly of Berlin, has more and more become the task of the Mosquito. The latter, one of the war's great planes and already active in the Pacific, hacked at the capital for 36 nights running beginning February 20. It has also saved thousands of patriot lives in Norway, Denmark, France and the Netherlands by wrecking Gestapo headquarters and blasting open Nazi jails with daring pin-point bombing.

BRITISH AIRCRAFT

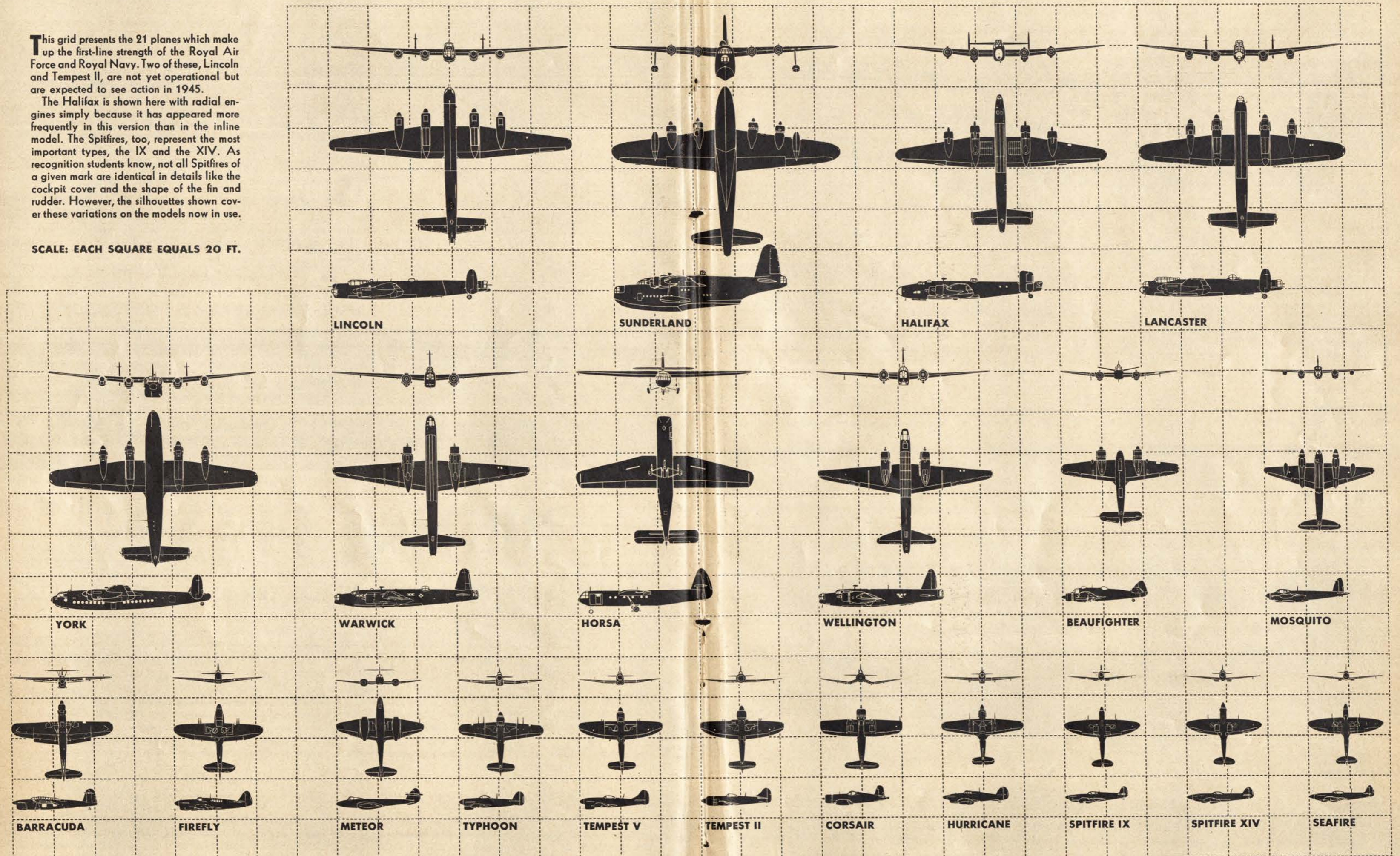
PRINCIPAL RAF AND ROYAL NAVY TYPES

~~RESTRICTED~~

This grid presents the 21 planes which make up the first-line strength of the Royal Air Force and Royal Navy. Two of these, Lincoln and Tempest II, are not yet operational but are expected to see action in 1945.

The Halifax is shown here with radial engines simply because it has appeared more frequently in this version than in the inline model. The Spitfires, too, represent the most important types, the IX and the XIV. As recognition students know, not all Spitfires of a given mark are identical in details like the cockpit cover and the shape of the fin and rudder. However, the silhouettes shown cover these variations on the models now in use.

SCALE: EACH SQUARE EQUALS 20 FT.



LINCOLN

SUNDERLAND

HALIFAX

LANCASTER

YORK

WARWICK

HORSIA

WELLINGTON

BEAUFIGHTER

MOSQUITO

BARRACUDA

FIREFLY

METEOR

TYPHOON

TEMPEST V

TEMPEST II

CORSAIR

HURRICANE

SPITFIRE IX

SPITFIRE XIV

SEAFIRE

THE FIRST-LINE FIGHTERS OF THE RAF



TYPHOON Designed as an interceptor, the Typhoon has become RAF's best tactical rocket plane and divebomber. The Sabre engine's air scoop under the nose is an

important recognition clue. The wing has rounded tips, dihedral on outboard panels only. Fin and rudder are rounded on top, have a vertical trailing edge and curve down below thick fuselage's belly-line.

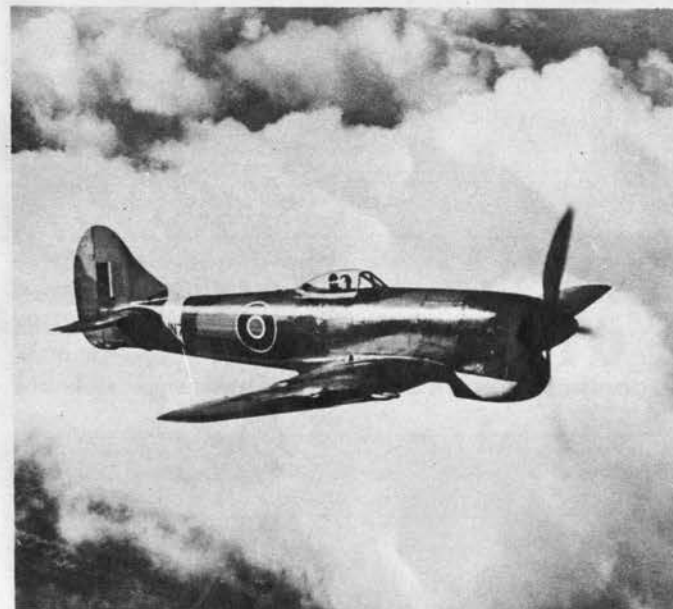
METEOR Pressed into service against last summer's V-1 attacks, the Meteor was the first Allied jet plane to see action. Its irregular fin and rudder and high tailplane appear

tacked onto slender, sleek fuselage which tapers to a sharp point at the nose. Wing, which bisects bottle-shaped jet units, has great chord at roots and tapers sharply on both edges. Cockpit sits well forward.

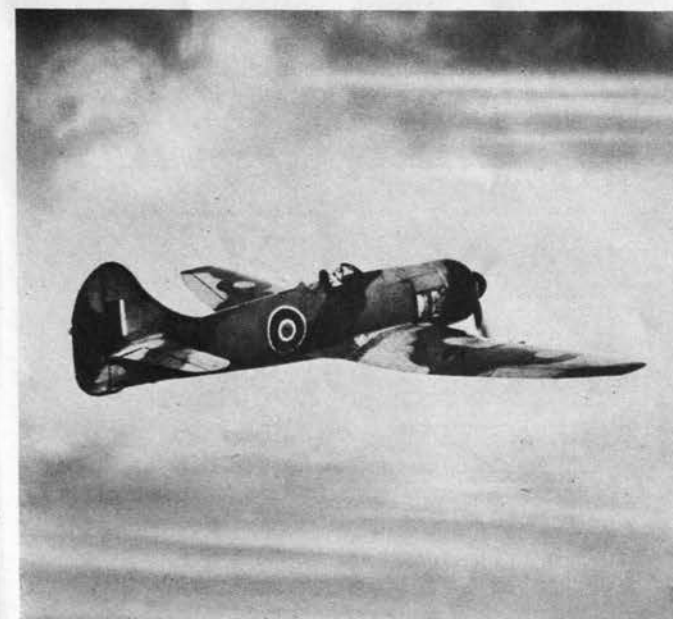




SPITFIRE IX Spitfires have elliptical wings with dihedral stemming from the roots. In head-on view wing radiators are clue to the IX.



TEMPEST V Curved fairing of the fin and the wing's curved trailing edge and square tips distinguish the newer Tempest from Typhoon.



TEMPEST II First RAF radial-engine fighter since 1940, the Tempest II is now mass-produced. Barrel nose is main difference from V.



SPITFIRE XIV Frequently modified, the Spitfire is still among world's best. Broader fin and rudder, deeper radiators and a longer nose distinguish it from the Spitfire IX.

AIRPLANES FLYING FOR THE ROYAL NAVY



BARRACUDA A divebomber and torpedo plane, Barracuda is very maneuverable. Tailplane is set high to avoid turbulence created by dive-brake flaps.

SEA OTTER Important in air-sea rescue, the Sea Otter (*below*) is development of the Walrus, can be distinguished by archaic biplane structure, boatlike hull.





CORSAIR Clipped wingtips distinguish British Corsairs from those flown by U. S. Navy and Marine pilots. Otherwise they are identical and can be recognized by the in-

verted gull wing and tall fin and rudder extending forward of the stabilizer. A veteran of several Tirpitz attacks, the Corsair supplements the Seafire (*below*), Hellcat and Wildcat on British carriers.



SEAFIRE Britain's favorite fighter is basically unchanged in its ship-based version. The latest model (*see grid*) will have a full-view canopy and retain the pointed rudder.



FIREFLY Long range, heavy armament mark Firefly. Low wing, built-in greenhouse, triangular tail distinguish it from inline Judy. Tailplane is set well forward.

BRITISH AIR TRANSPORT AND PATROL



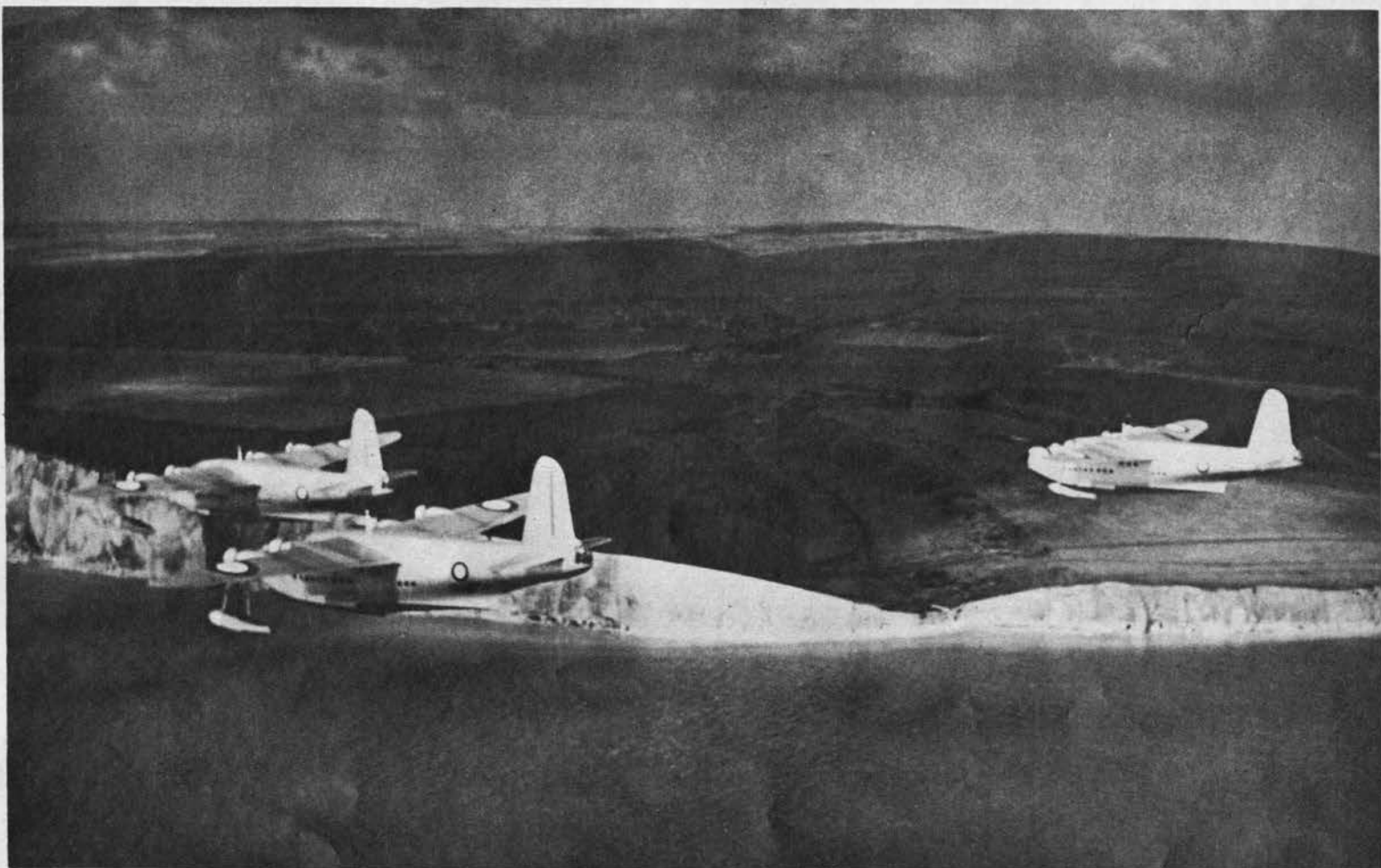
HORSA Gliding in for a landing at dusk, a Horsa shows its long roomy fuselage, tricycle landing gear and high, well-braced tailplane. This glider has been used in all British

air borne operations from Sicily in the summer of 1943 to the Rhine crossing late last March. Larger than the U.S. CG-4A, it carries 30 fully equipped men, is usually towed by Stirling or Halifax glider tugs.



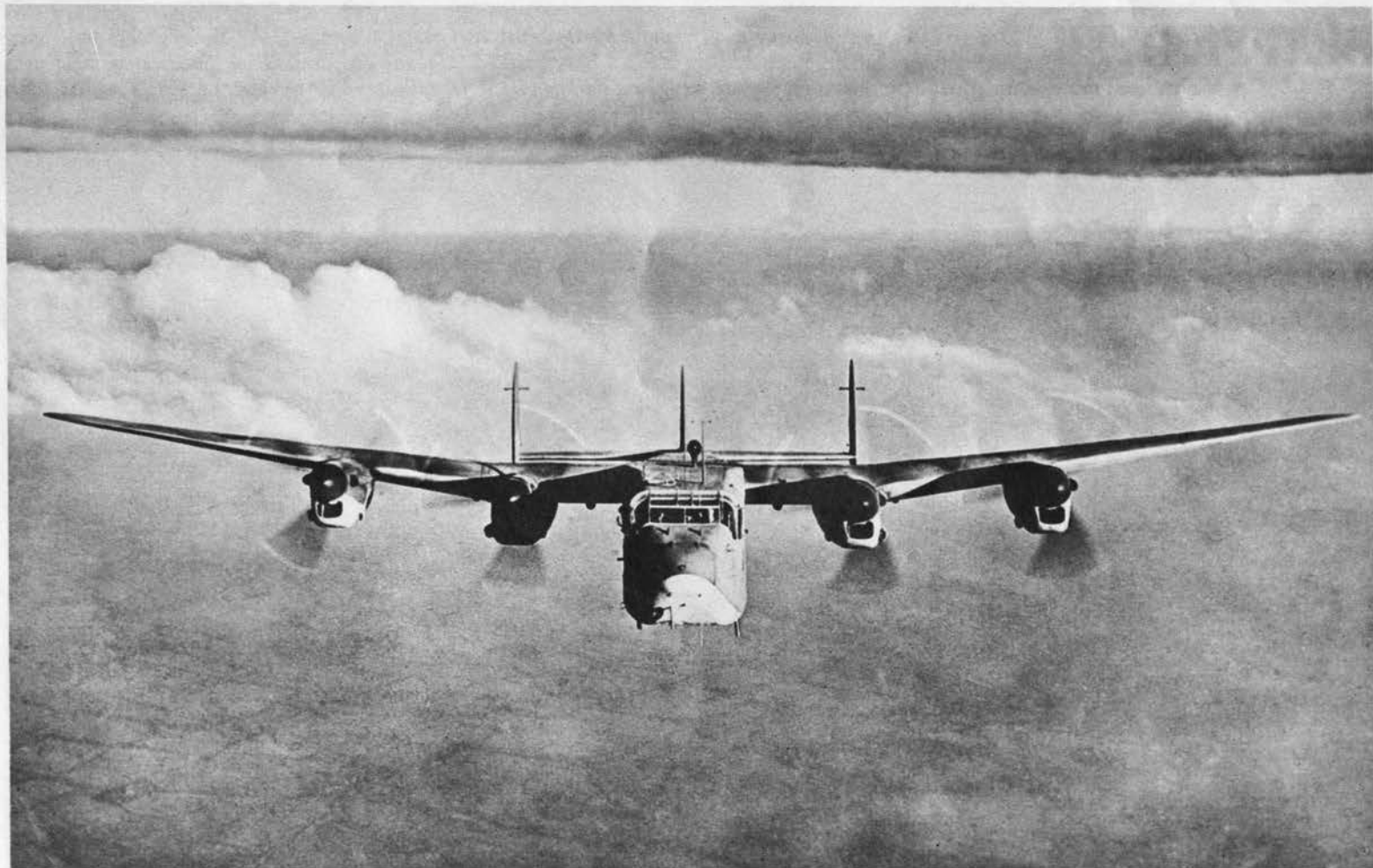
WARWICK Specializing in air-sea rescue, Warwick I carries a jettisonable dinghy which makes a bulge under fuselage. Nose, tail and dorsal turrets distinguish

this air-sea rescue Warwick from the transport, Warwick III. An enlarged Wellington, the Warwick is one of Allies' biggest twin-engine planes, with a 97-ft. wing span. Engines are U.S.-built Double Wasps.



SUNDERLAND Sunderland sweeps by the RAF's Coastal Command have accounted for Nazi subs from Iceland to the Bay of Biscay. It is now serving

the RAAF and RNZAF as well, as both patrol plane and transport. Upturned blunt nose, short, deep hull and an unusually tall single fin and rudder set it apart from other four-engine flying boats (*see p. 46*).



YORK In service since the fall of 1943, the Avro York shows its Lancaster ancestry in the bulky fuselage, shape of its high-set wing and the guitar-pick outboard fins and rudders. The

fuselage appears to be undershot at the nose. The unusual triple tail assembly is an outstanding recognition feature of the airplane. Fast for a commercial type, the York has a top speed of about 285 m.p.h.

TWO WORK HORSES AND TWO HEAVY BOMBERS



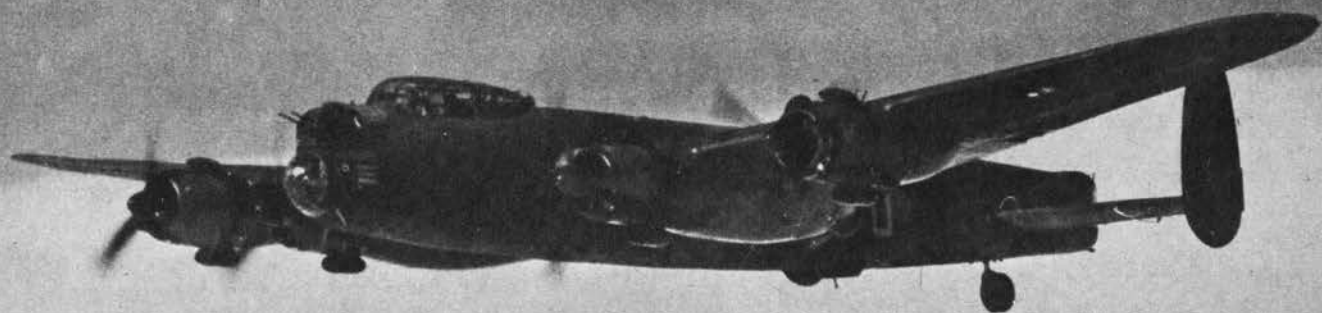
MOSQUITO Mosquito does everything but carry torpedoes and the RAF's heaviest bombs. Equipped with a solid nose mounting machine guns and cannon for

nightfighting and ground attack, it is also seen with a plexiglass nose in bomber and reconnaissance versions. Semi-elliptical fin and rudder, wide chord of shoulder wing at root, short nose are recognition aids.

BEAUFIGHTER Formerly an RAF mainstay as a nightfighter and strafing plane, the Beaufighter is now used more as an antishipping weapon. It has

replaced Beaufort in Coastal Command. All Beaufighters now operational have marked tailplane dihedral. Wing position is mid; nose is extremely short, does not extend far beyond the wing's leading edge.





LANCASTER The pride of the Bomber Command, the Lancaster has been shattering German industry with 11-ton "volcano" bombs. The mid-wing has round tips, ta-

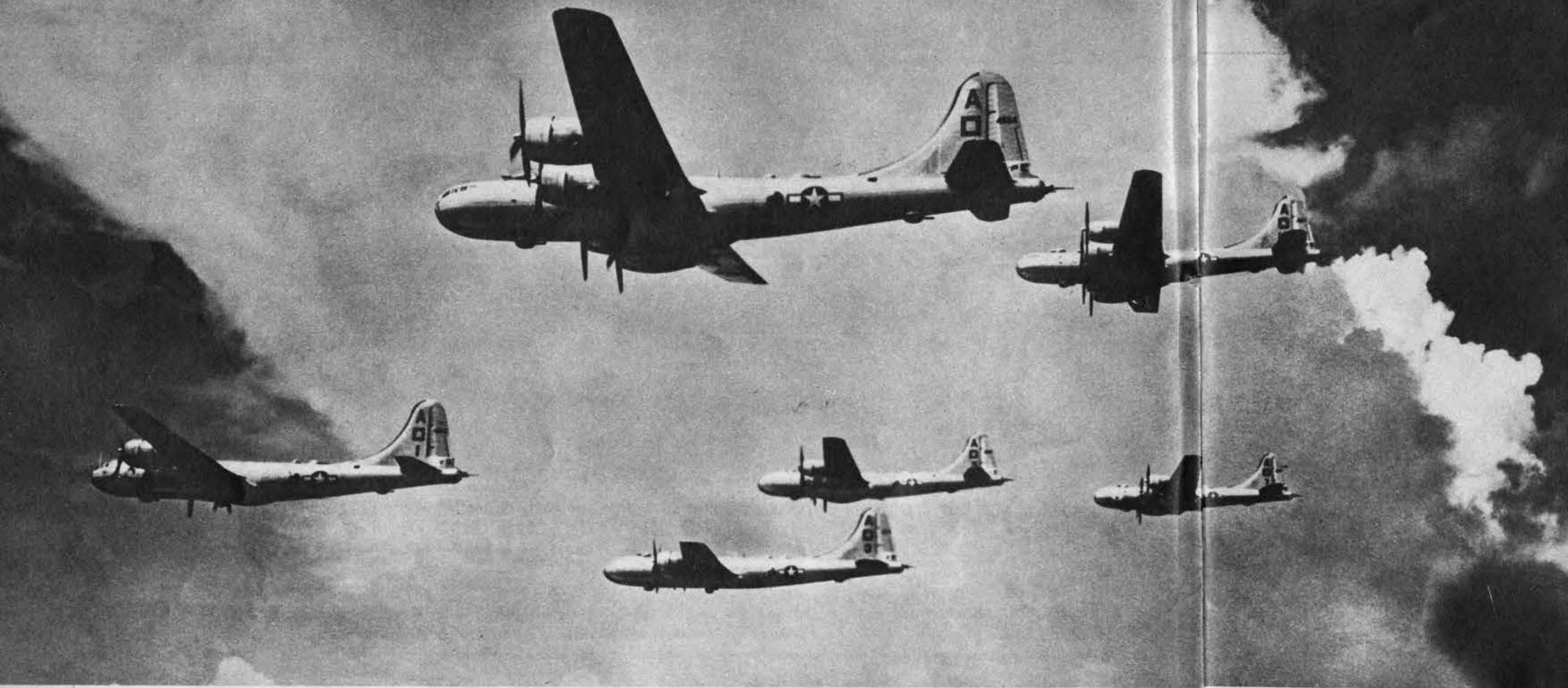
per on both leading and trailing edges of outboard sections. Tailplane bisects the fuselage. Radial engines have replaced inlines on Lancaster II (*above*) but Merlin-powered models are also in action.

HALIFAX Streamlined nose, radial engines, and rectangular fins mark the Halifax VII (*below*), although, as with the Lancaster, inline versions are operational. Round

wingtips make the Halifax resemble Lancaster more than before, but nose contour and position of the tailplane remain different. Halifaxes are also seen as glider tugs and Coastal Command patrol planes



QUIZ NO. 3: B-29 PROBLEMS ON ROAD TO TOKYO



During the long tedious hours of round trip between Saipan and other bases and Tokyo, a

B-29 may fly over many varied Japanese targets as well as elements of our own striking force.

On these two pages are pictured only a few of the types of surface craft that dot the seas

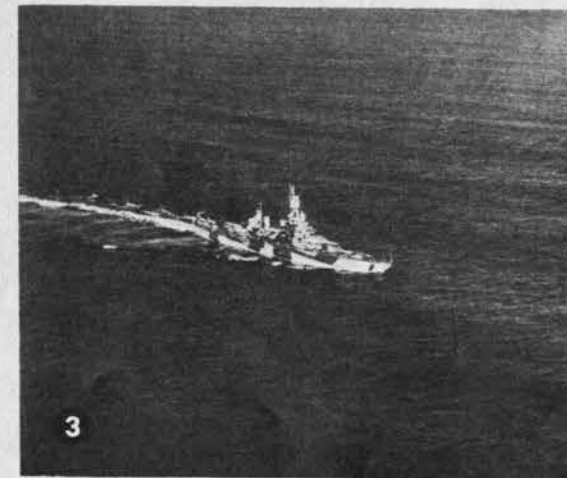
under the Superforts in the course of their raids over the increasingly active far Pacific.



1



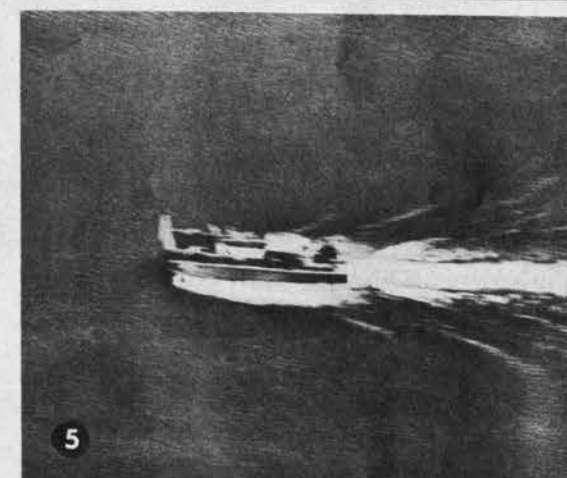
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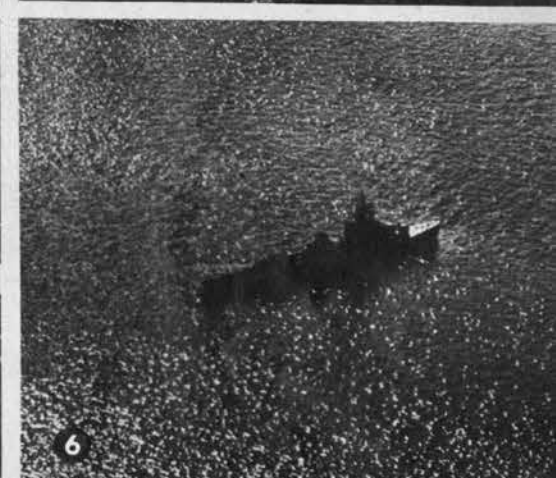
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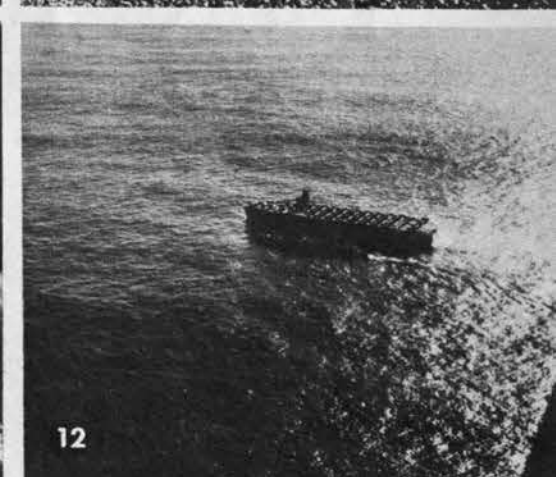
9



10



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14



15



16



17



18



GUNS TURNED TO THE REAR, TWO TIGERS AND A PANTHER (CENTER) WERE EVIDENTLY TRYING TO COVER A GERMAN RETREAT WHEN CRIPPLED BY

SOVIETS. PANTHER HAS RAKED LINES, PROMINENT GUN MANTLET. TIGERS ARE MORE SQUAT AND BLOCKY, HAVE FLAT MANTLETS AND 88-MM. GUNS

GERMANS' LAST HOPE

Heaviest tanks and SP guns are likely to guard Nazi fanatics making their last-ditch stand

As Nazi forces retreat to wherever they hope to make their final stand, they will very likely be screened by the heaviest, most vicious tanks and tank killers in the German arsenal. Named after beasts of prey, they are being used as fast as they are produced.

Best known of these weapons is the world's heaviest tank, the King Tiger. Weighing 75 tons and armed with an 88-mm. gun of high muzzle velocity, its outstanding quality is the degree of protection it affords its crew and power train. Turret armor is seven inches thick in front, while on the glacis plate it has a six-inch thickness. Modified since its first appearance, the King Tiger looks less like a Panther than before. The turret top is sloped towards both front and rear and there is no visible gun mantlet. Some units have the model-43 tank gun with a two-piece barrel.

Older than the King Tiger but just as heavily armed is the Tiger, PzKpfw VI. First tank to carry an 88-mm. gun, it appeared in North Africa late in 1942. The boxy design of turret and hull showed definite relationship to the latest German medium tank, PzKpfw IV, but the suspension, with eight sets of interleaved bogie wheels supporting the track, was different. On the newest Tigers the ends of the axles protrude from all eight bogies as on the King Tiger.

Approximately a year after the Tiger was introduced, the Ger-

mans sent a second heavy tank into battle. This was the 45-ton Panther, PzKpfw V (above), considered by many experts to be the war's finest all-round heavy armored vehicle. Using a suspension similar to that of the Tiger, the Panther looks quite different, having a sloping front plate and curved mantlet. Main armament consists of a high-velocity 75-mm. gun. Top road speed is 30 m.p.h.

Using the Panther chassis as a gun carriage for Tiger armament, the Germans produced a powerful tank destroyer called the Hunting Panther. Chiefly a defensive weapon, the Hunting Panther is often dug in as a stationary antitank gun. The low fighting compartment has a flat roof which extends halfway to the vehicle's rear, affording a convenient platform for infantrymen who often ride in a prone position. Heavier than the Hunting Panther and consequently much less mobile is another SP 88-mm. gun once called Ferdinand and now officially known as the Elephant. It has a rear driving sprocket and six evenly spaced bogie wheels. The fighting compartment is at the rear.

The last of these huge weapons, the Grizzly Bear, falls into a somewhat different category, since it does not have a high-velocity tank or antitank gun. It is, however, one of the Nazis' heaviest SP howitzers. As such it is a likely candidate to join the other weapons on these and the following pages in the Wehrmacht's last fight.



King Tiger's size can be judged from U.S. prisoners filing past during the battle of the Ardennes bulge. The unusually wide treads measure

32 in. across. The powerful 88-mm. gun has a two-piece barrel and prominent muzzle brake. The mantlet is in the form of heavy collar.

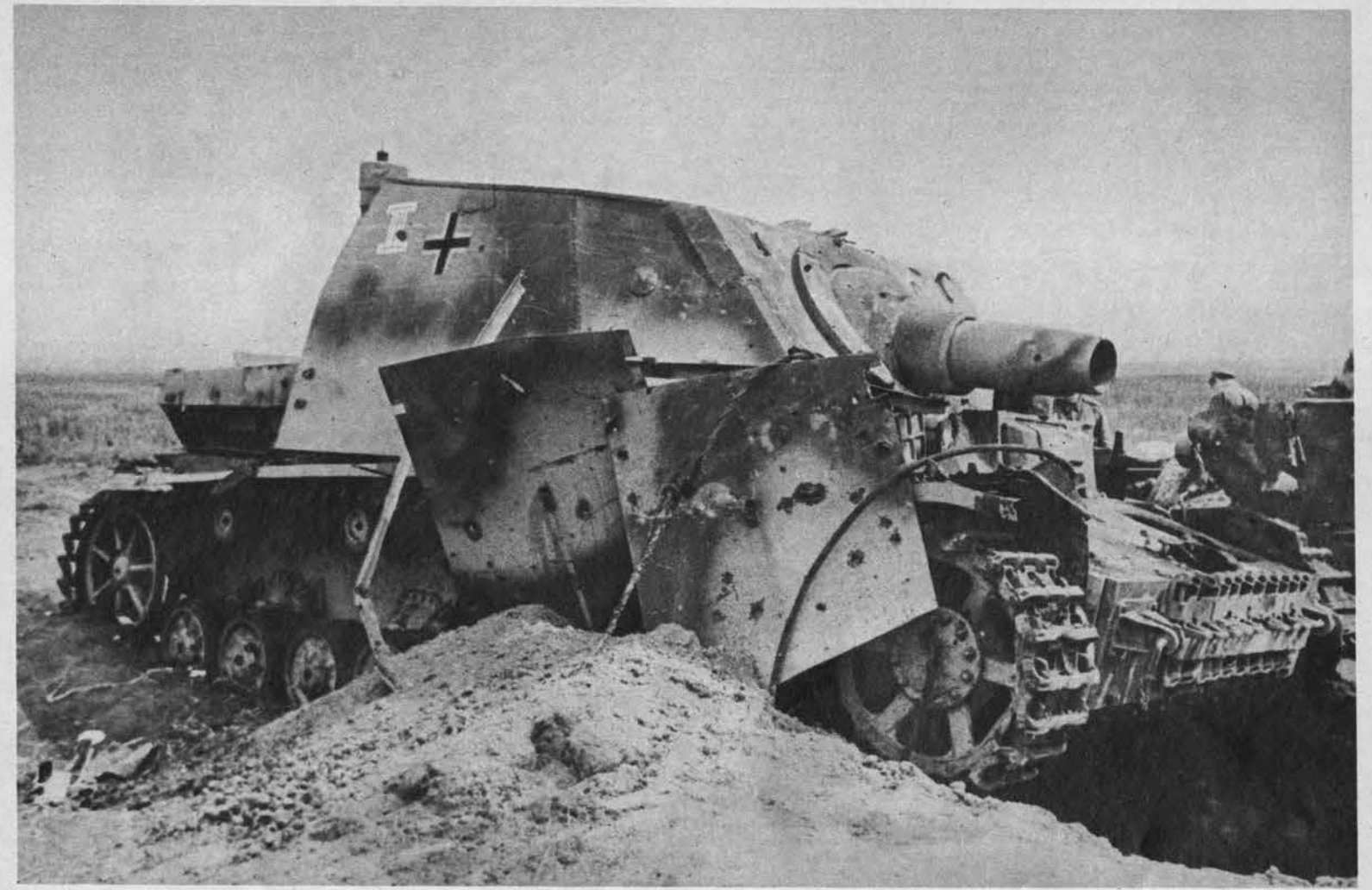


Low silhouette makes Hunting Panther hard to hit, easy to dig in for antitank defense. The chassis is same as that of the Panther tank, but

low, flat-topped fighting compartment mounting an 88-mm. gun replaces the Panther's turret. Armor is coated with antimagnetic plaster.

Crippled Elephants show their massive bulk from the front and side. Formerly known as Ferdinand, the Elephant has six-wheel rear-drive

sprocket suspension which was unsuccessfully tried on the Tiger. When seen in head-on view, the Elephant actually resembles the Tiger be-



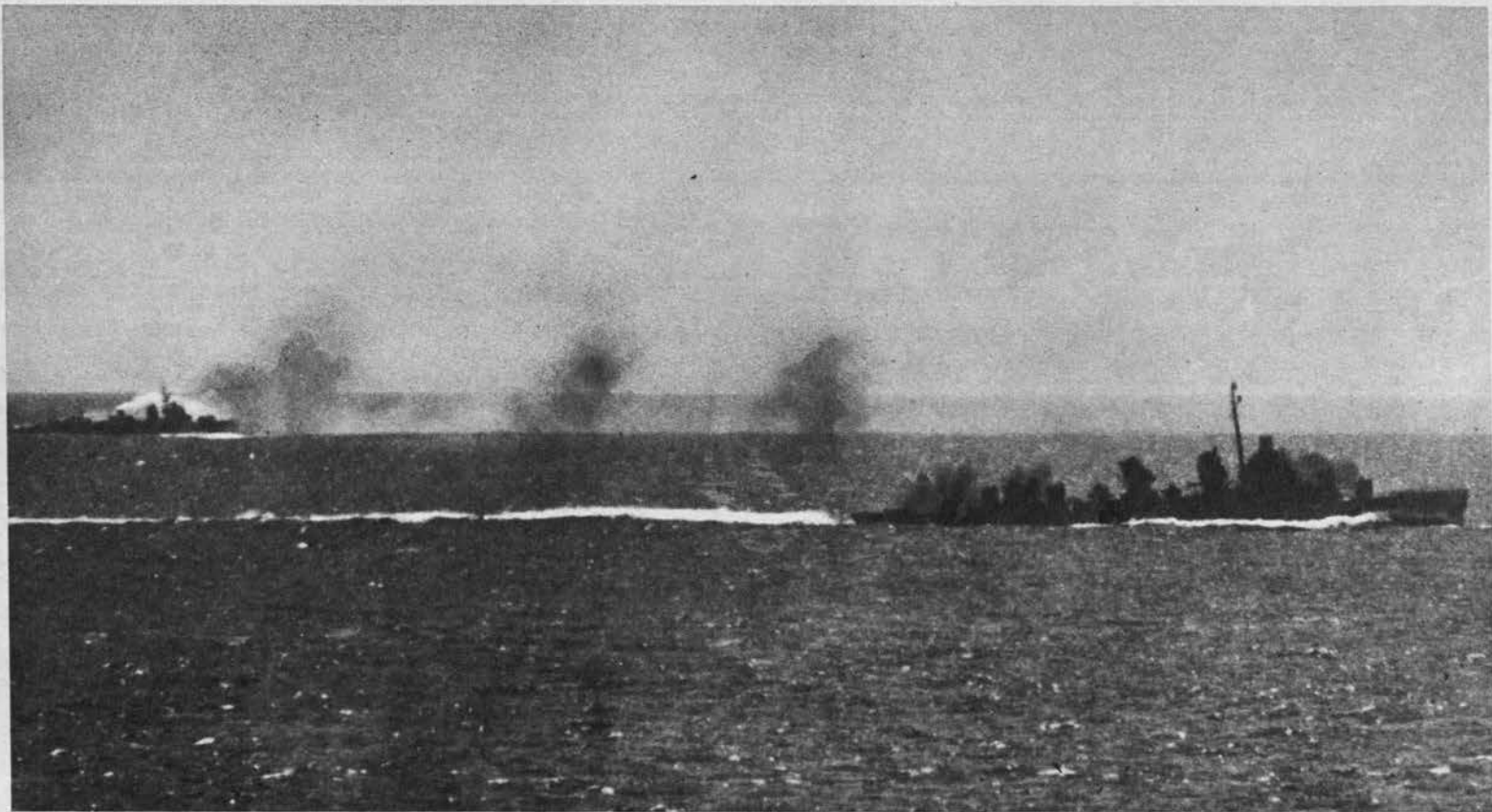
PzKpfw IV chassis serves as the carriage for the big Grizzly Bear with its stubby 150-mm. assault howitzer. The gun shield with its flat

sides and sharply sloping front plate is mounted over the middle of the vehicle. Only half the gun barrel extends beyond the ball mount.

cause of the three distinct layers formed by the bow plate, hull and fighting compartment. Hull armor is eight in. thick in front, con-

tributing to the Elephant's 72-ton weight and poor maneuverability. Empty shell cases are ejected through a large hole in the rear plate.



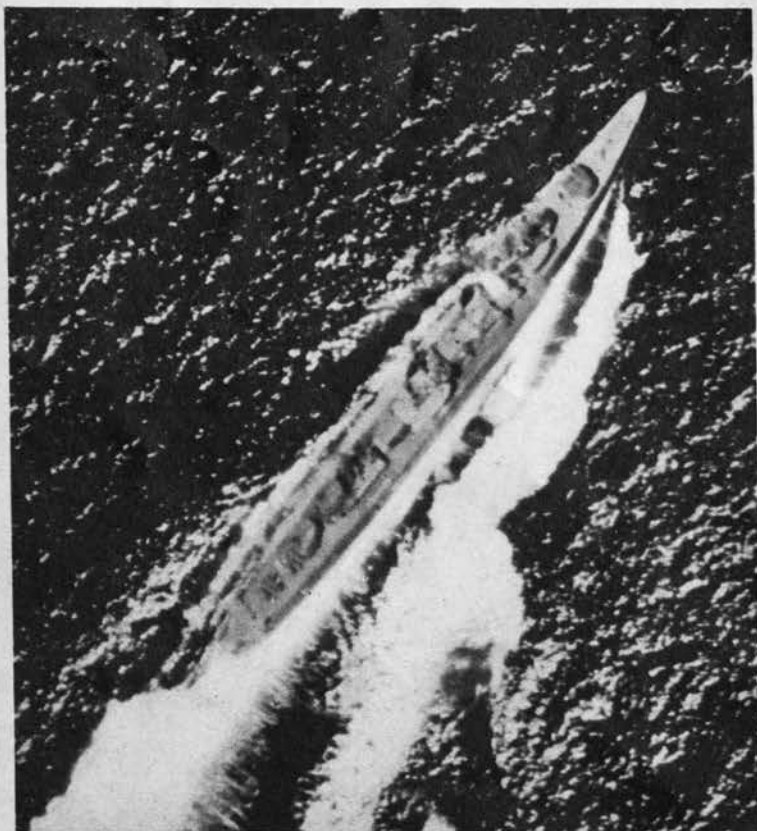


FLETCHER CLASS DD (RIGHT) AND A JAPANESE TAKANAMI (LEFT) SLUG IT OUT DURING A CLOSE-RANGE TASK FORCE ACTION IN THE PACIFIC

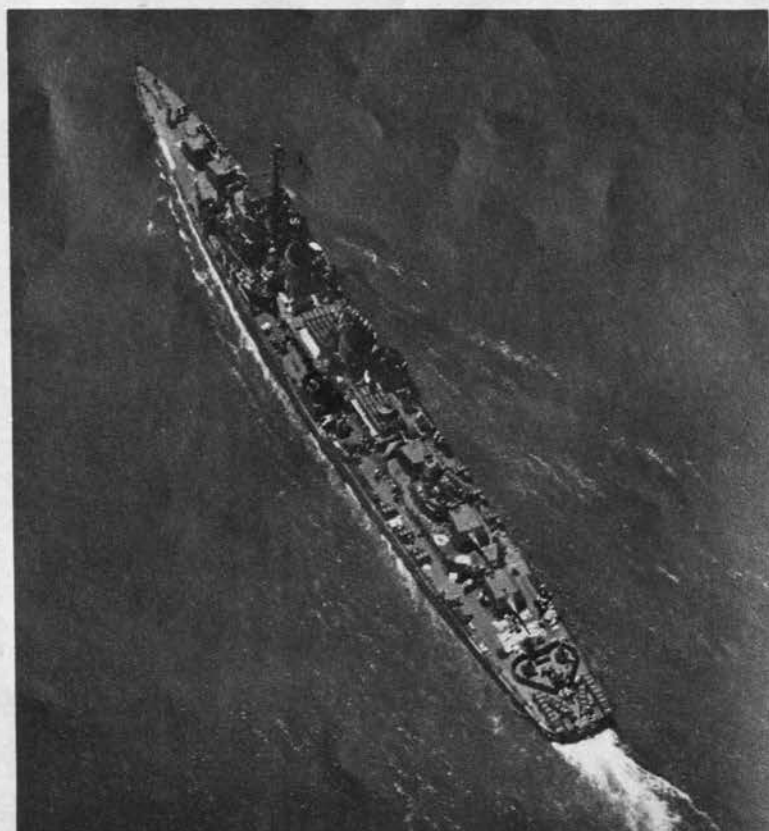
CONTRASTING DD'S

U.S. Fletcher Class and Jap Takanami show differences between two navies' two-stackers

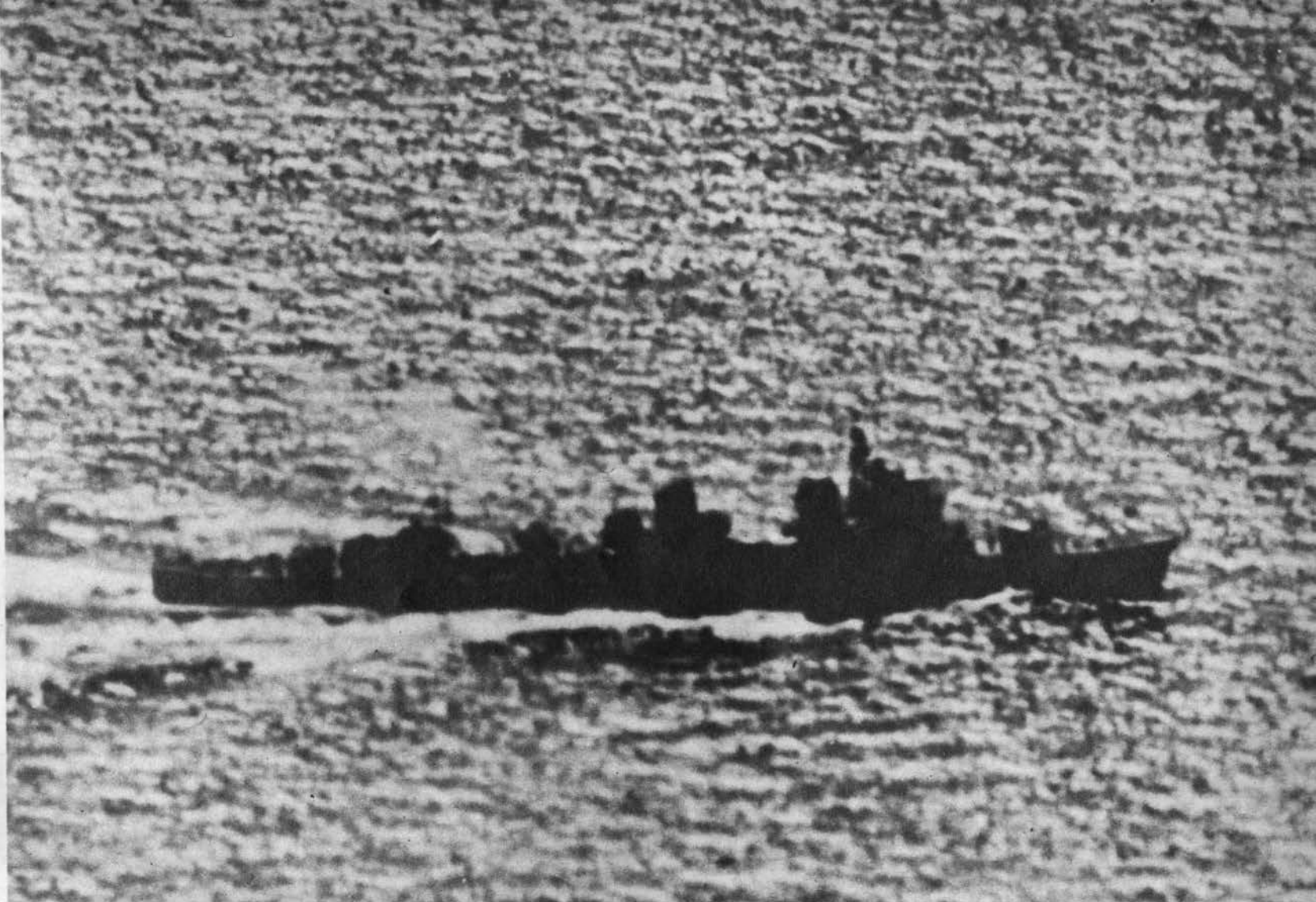
With Japan's bigger warships wary of approaching a U.S. task force, combat recognition in the Pacific will to an ever greater extent be concentrated on smaller types. One such problem in ship recognition concerns U.S. vs. Japanese two-stack fleet destroyers. Superficially similar because of their size, shape and the fact that they all have two stacks, these ships can, nevertheless, be recognized by national characteristics governing their overall appearance (see *Journal* for December 1944) and by differences in specific details. As illustrated by the Fletcher and Takanami Classes, these differences are brought out by the pictures on these pages.



Single gunhouse gives Takanami pushed-forward deck plan, shorter foredeck than Fletcher. Note upswept, tapered lines of Japanese bow.



Square stern, single mounts distinguish Fletchers from Jap modern two-stackers. Three gunhouses aft make Fletchers unique in Pacific.

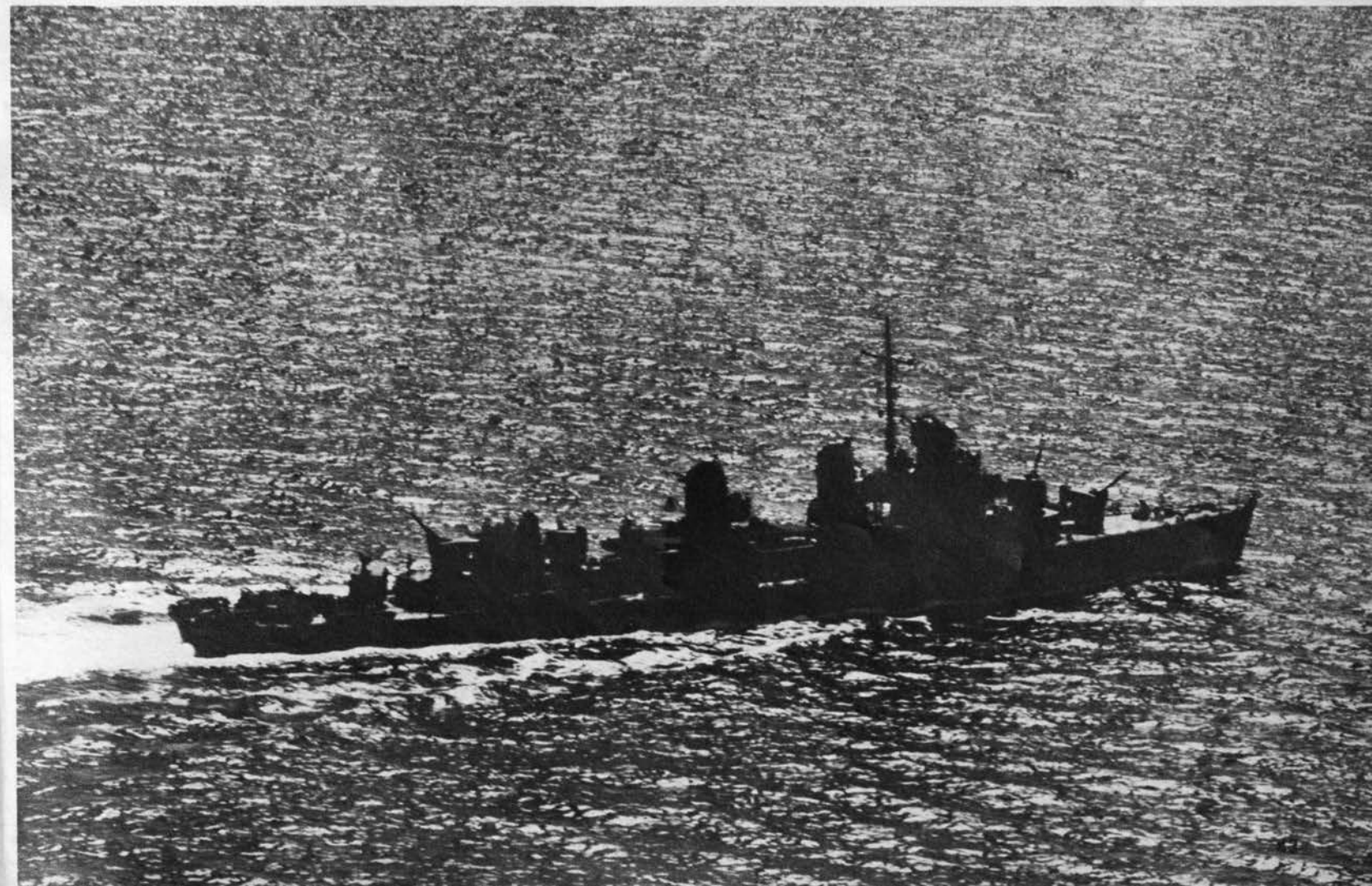


Takanami Class DD has single gunhouse forward, set distinctly apart from the bridge. Except for Terutsukis, all Jap DD's have only this

one mount forward. Mast on the newer Japanese destroyers is tripod, with prominent mainmast halfway between after stack, stern.

Fletcher profile is more substantial than Takanami's. The stacks and torpedo mounts rise from low deckhouse amidships rather than from

deck itself. Superfiring gunhouses create sturdy, sloping outline forward; raised gunhouses form mound of superstructure near stern.





TOPSY, CHIEF JAP ARMY TRANSPORT, HAS A LONGER NOSE, MORE SLENDER FUSELAGE THAN U.S. TYPES. BOTH WING EDGES TAPER EVENLY

JAP TRANSPORT PLANES

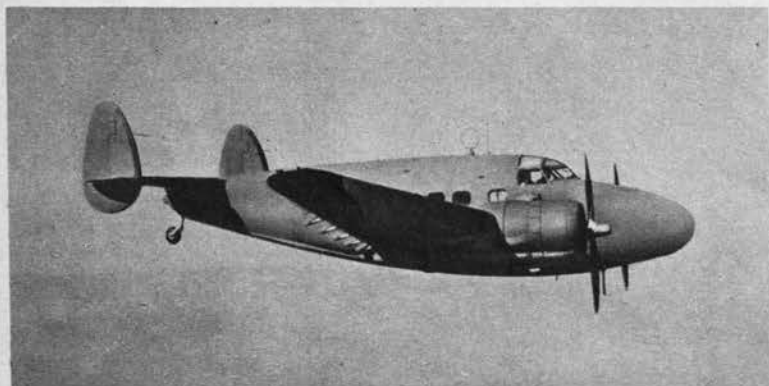
Until recently the recognition of Japanese transport planes was not a major problem for U.S. airmen since location alone determined in most cases whether a transport was Allied or Japanese. But with U.S. forces less than 400 miles from Japan proper, accurate transport recognition is now a vital matter. Since the crippling of their fleet, the Japs must depend more on airplanes, as at Iwo Jima, to supply island garrisons besieged by U.S. troops which are themselves receiving airborne supplies.

The transports used by the enemy fall into two classes, those designed exclusively for transport use, with code names beginning with "T," and second-line bombers and flying boats adapted for transport service. The latter, Nells, Sallys, Betty 11's, Mavises and Emilys, should present no great difficulty, since (except for Emily) they are unmistakably Japanese in design (see *Journal* for March). It is with the "T" types that trouble can be expected, for three of them, Tabby, Tess and Thelma, are outright copies of U.S.

models and a fourth, Topsy, does not look particularly Japanese.

Fortunately our DC-2 (C-32) and Lockheed Lodestar, prototypes of Tess and Thalia respectively, are not operating in areas near Japan. Even Tabby, which is almost a replica of the DC-3 (C-47), differs slightly in detail from the U.S. type (see *opposite*). But these differences apply only to details which cannot be observed unless looked for intently by U.S. air crews.

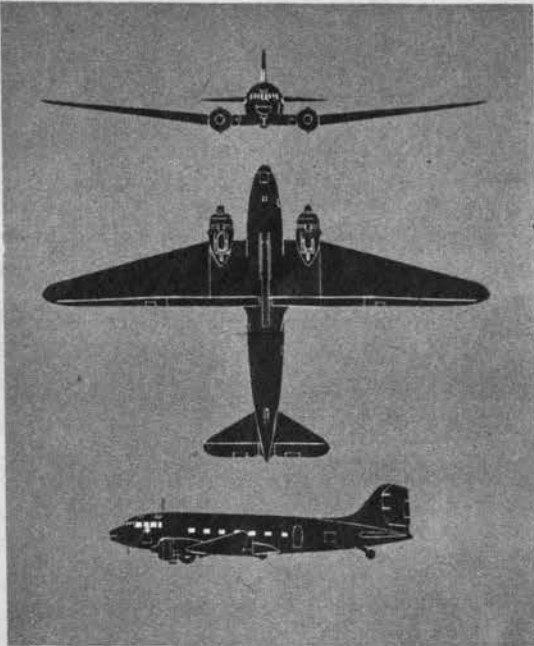
This means that recognition by total form does not always provide the answer as regards the recognition of transport planes in combat zones. U.S. airmen must depend to a large extent on the details pointed out on these pages, may even be able to confirm their decisions by seeing markings. And identification procedures—attitude of approach, behavior—will, in these instances, do more to establish identity than pure visual recognition. On these pages, wherever a Japanese airplane having a resemblance to an Allied plane is shown, the Allied counterpart is also presented.



Lockheed ancestry is seen in newly coded Thalia's Fowler flaps, oval fins, rudders. Smooth belly marks it from PV's. Thelma is Lockheed 14.

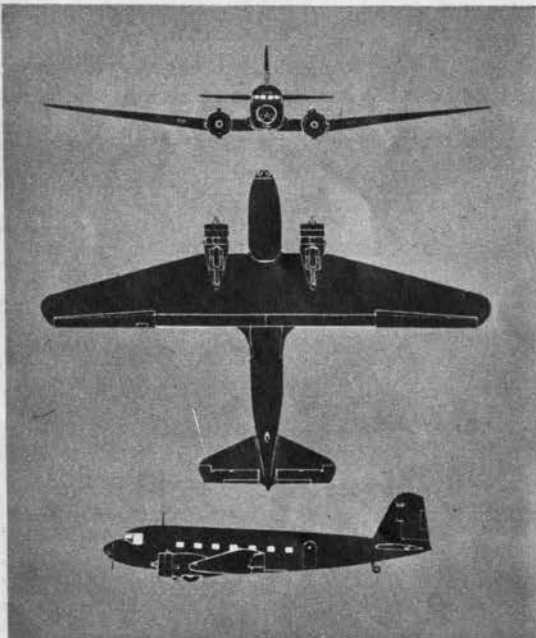


Thora, a prewar commercial plane, is strictly Jap design. Nose is pointed; small fin has sharply slanted leading edge much like Dinah's.



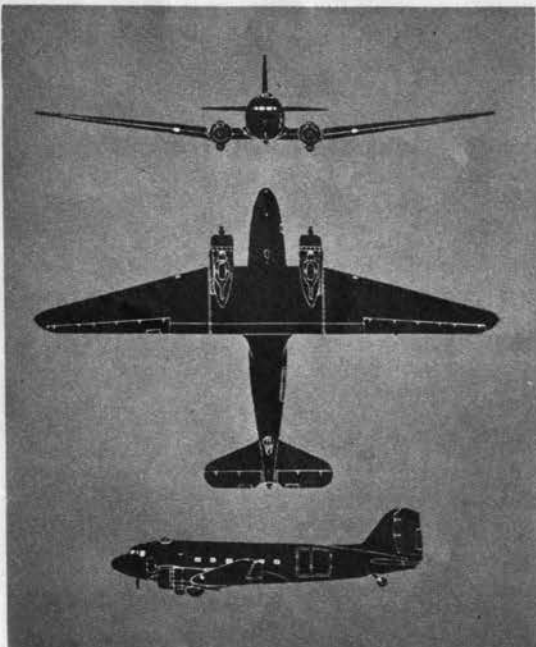
Comparing Tabby with U.S. C-47 (bottom of page) reveals rounder fuselage in the head-on view, larger spinners, shorter nacelles, more

smoothly curving fin. Also fuselage comes to a sharp point at tail. However, Tabby's overall appearance is amazingly similar to the Skytrain.



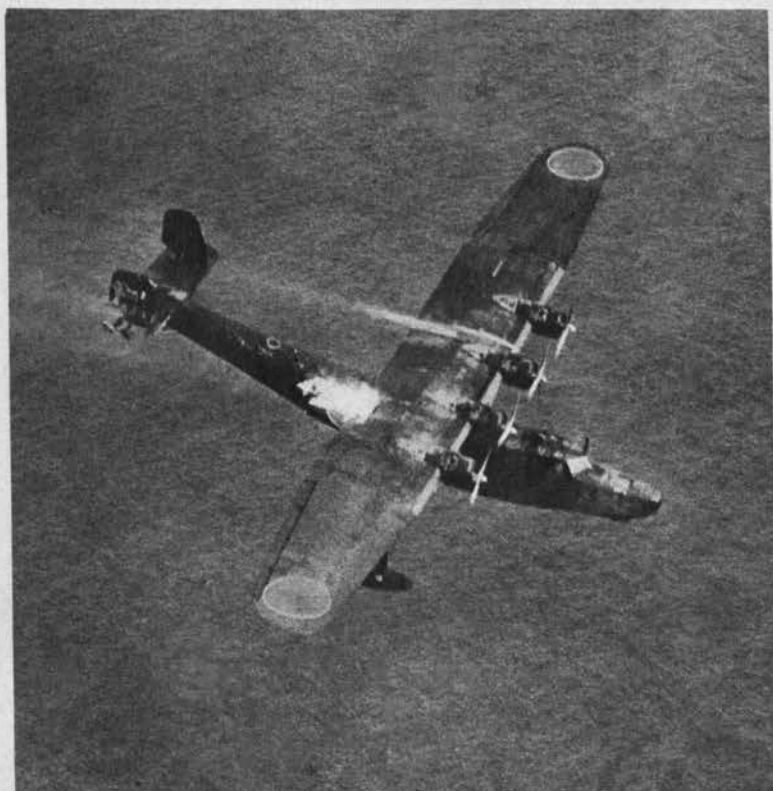
Tess is smaller than the C-47, and head-on has a deeper, narrower fuselage. Best recognition feature is the fin which stops abruptly for-

ward, although several Tesses have been found with fin and rudder similar to Tabby's. The trailing edge of rudder shows a definite slant.



USAAF's C-47 (Navy R4D) has a cropped tail just under the rudder. Fin's downward curve has a definite break just above fuselage. Longer

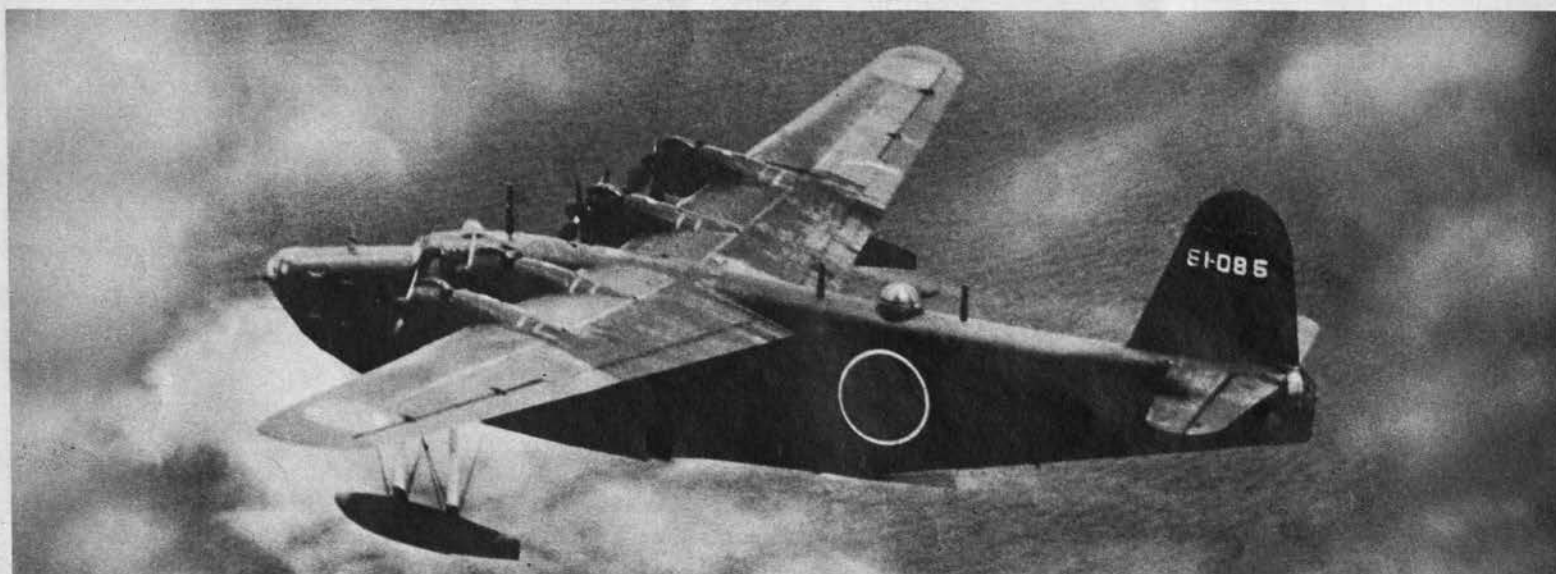
engine nacelles make the nose appear shorter than on Japs' Tabby and Tess. The bite in the C-47's tailplane is a further distinguishing feature.



Twin fins and rudders might cause confusion between Mavis and PBM. Mavis has a parasol wing, much thinner fuselage, longer nose.



PBM has deep fuselage, gull wing mounting two engines. Fingernail fins, rudders slant; are outboard of the tailplane which has dihedral.



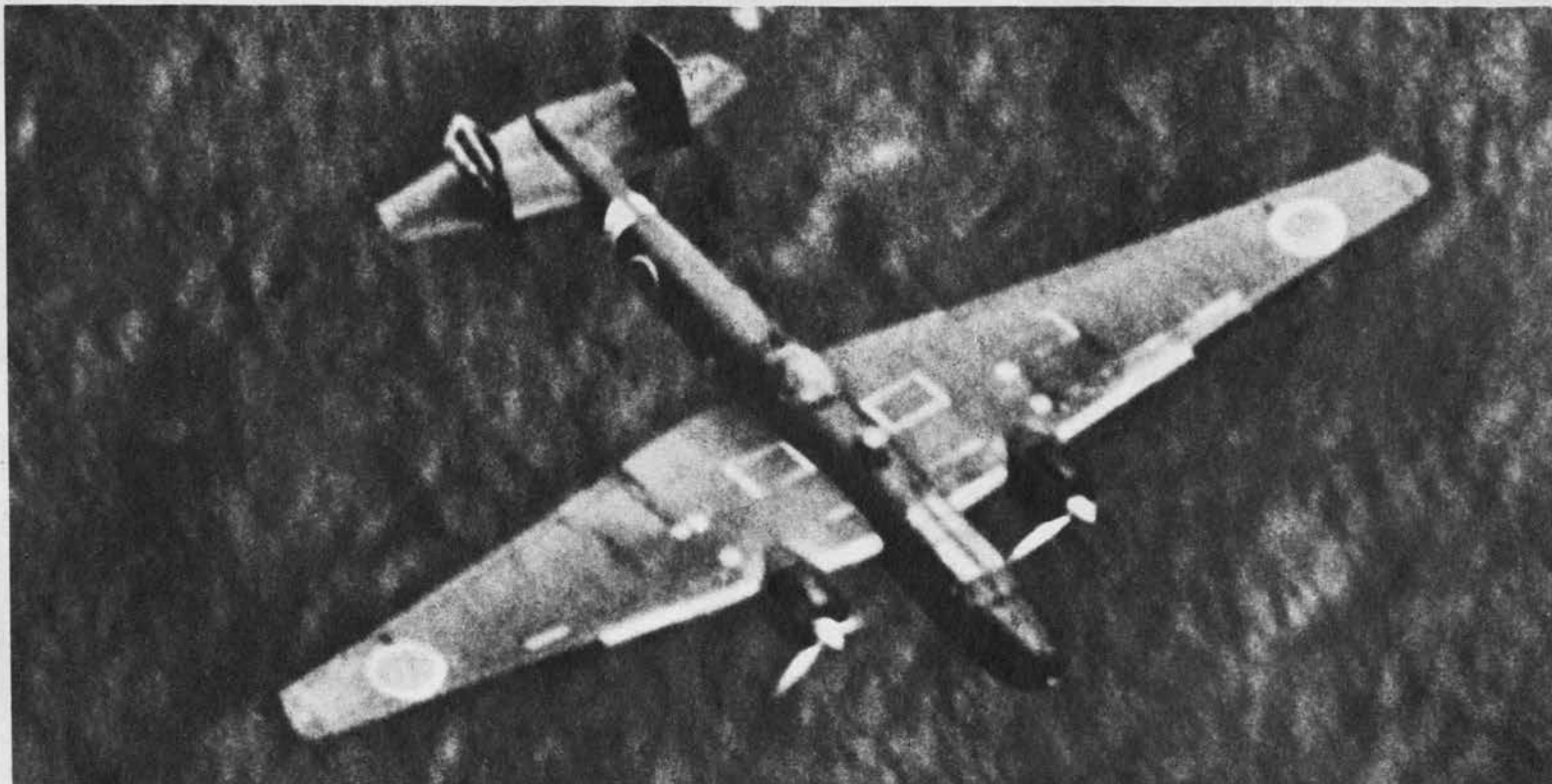
Long, pointed nose is one of several details which differentiate Emily from the RAF Sunderland (*below*). Emily's wing has somewhat greater

dihedral and twelve ft. more span; the floats are braced by diagonal struts. The hull line is straight between the second step and the tail.



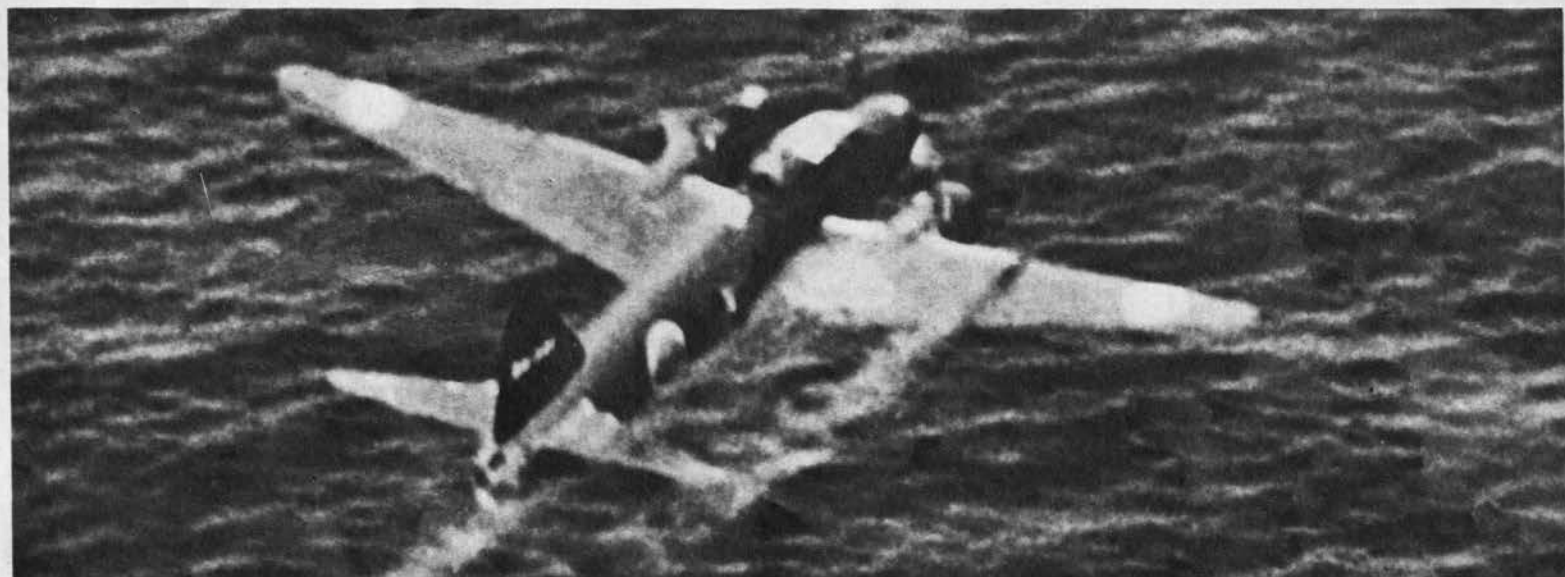
Fin and rudder on Britain's Sunderland are much taller than Emily's but not so wide. Nose is short and blunt and the hull has a decided

step-up aft. Since flying boats are armed, fighter pilots must make decisions from greater distances than in the case of transport planes.



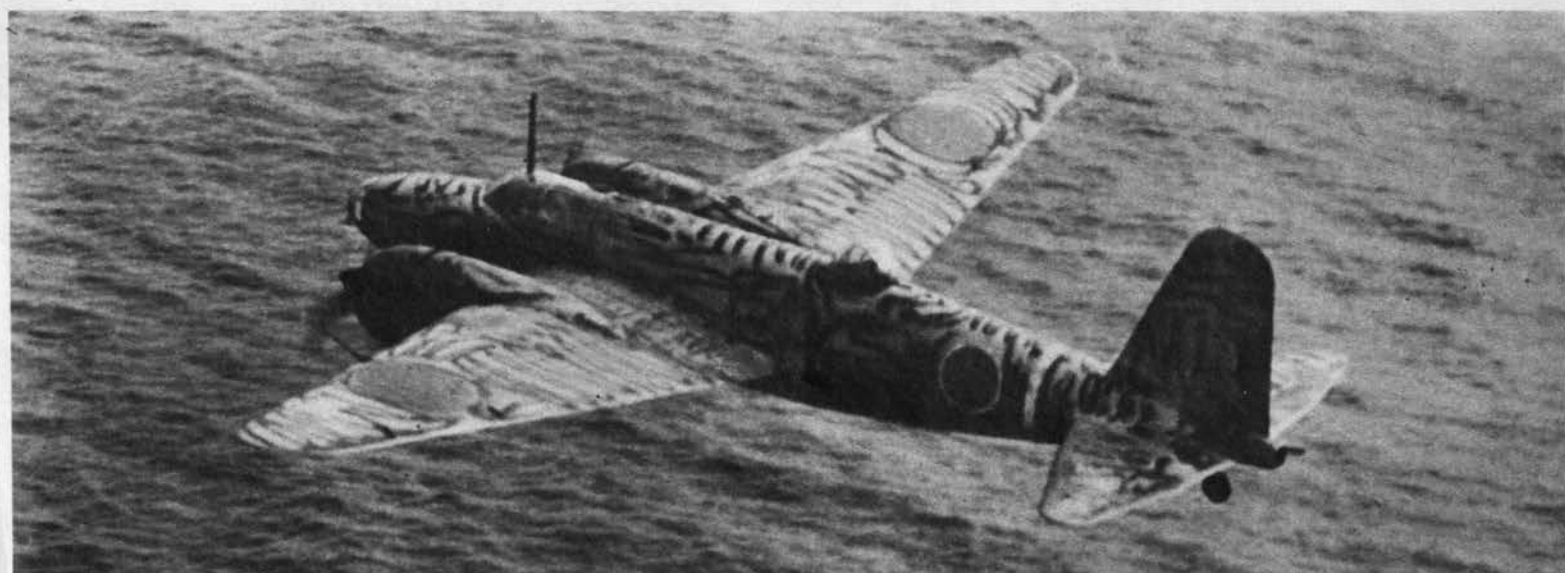
Old bomber Nell has been retired from combat but is still operational as a transport. Nell is one of few Jap planes with twin fins and rudders,

but mid-wing, short nacelles and gun blisters set it apart from U.S. planes. Armament has been reduced on the transport version.



Transport Bettys are presumably Betty 11's since the newer models could hardly be spared from combat. Wingtips on Betty 11 are raked,

and dorsal armament is 7.7 mm. in a turret. But the best recognition aids, thick fuselage and fat tail, are the same as on current Bettys.



Sally, like Nell (*top of page*), is out of service as a bomber but appears in combat areas as a transport. It is likely that the transport version

resembles the latest bomber, Sally 2 (*above*), with a tail gun position. The tailplane is invisible when Sally is seen from a head-on view.

QUIZ ANSWERS

QUIZ NO. 1

1. Sugar Baker Love
2. Fox Tare Baker
3. Fox Baker
4. Fox Baker
5. Sugar Able Sugar
6. Tare Two Stacks, Fox Tare Charlie
7. Fox Tare Dog
8. Fox Tare Charlie
9. Fox Tare Able

QUIZ NO. 2

1. PBM's
2. PBV
3. PV-1
4. Emily
5. F4U
6. Zeke
7. Dinah
8. C-54
9. Lilly
10. F4F
11. Frank
12. George
13. Jill

QUIZ NO. 3

1. U.S. submarine
2. Cleveland Class CL
3. Colorado Class BB
4. U.S. LST
5. LCV carrying cargo
6. Fletcher Class DD
7. U.S. PT
8. U.S. AO (fleet oiler)
9. Japanese LSM's
10. U.S. rubber life rafts
11. U.S. AGC (communications headquarters ship)
12. Sangamon Class CVE
13. Japanese lugger
14. Shimakaze Class DD
15. Japanese PT 101 Class
16. Alaska Class CB
17. Ise Class BB-XCV
18. Porter Class DD, Atlanta Class CL

QUIZ NO. 4

1. U.S. M-4 medium tanks
2. Japanese medium tank, Model 2587 (Improved) with 47-mm. gun
3. German PzKpfw V Panther
4. U.S. M-18 tank destroyer
5. U.S. M-7 SP howitzer
6. Soviet 152-mm. howitzer on KV chassis (SU-152)
7. Japanese light tank, Model 2595
8. U.S. M-3 medium tank
9. British Churchill Crocodile
10. U.S. LVT (4), U.S. M-4 medium tank

QUIZ NO. 5

1. C-47
2. Frances
3. PV-2
4. Judy
5. SC-1
6. Jack
7. F7F
8. Tojo
9. P-51D
10. Tony
11. P-61
12. Nick
13. P-47N
14. Frank
15. PB4Y-1



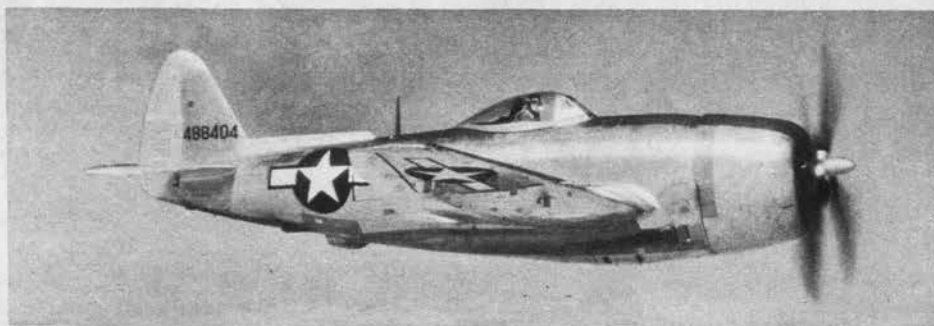
When the historic first U.S. fighter strikes were made on Tokyo Feb. 16-17 by the carrier-based planes of Vice Admiral Marc Mitscher's famous Task Force 58, one of the planes carried LIFE Photographer W. Eugene Smith. Despite the thick weather, he took this striking picture of TBM Avengers flying over heart of the Japanese mainland.

CREDITS

The pictures used in the *Journal*, unless otherwise specified (see below), came from the Allied Armed Services.

- Cover—W. Eugene Smith
 2—Top right, Frank Scherschel
 24—Fourth row left, Elliot Lisofon
 34—Top, Samson Clark
 38—Top, Sovfoto
 41—Top, Sovfoto
 45—Bottom right, William Vandivert
 48—Top, Republic Aviation
 51—Second row left, Acme; third row center, Sovfoto; third row right, International

NEWS & MISCELLANY



Latest variation on the P-47 is the addition of a dorsal fin. It is designed to improve direc-

tional stability and will be standard on both N (above) and D models of the Thunderbolt.

NEWS

Patsy is the new code name for Pat. Originally Ki-74 was thought to be a single-engine fighter and coded Pat. However, a later, correct translation shows it to be a twin-engine bomber and reconnaissance plane and the code name Patsy was assigned. Its two radial engines are reported to have 2,700 hp. each at take-off, fuel injection and two stage superchargers. Patsy may be met in limited numbers this year.

Rex 11 (see silhouette on page 13) represents a strenuous effort by Japan to develop a high-performance seaplane fighter. Hampered in speed and maneuverability by its large single float, Rex will be at a disadvantage in combat with modern carrier and land-based planes. When pitted against slower bomber and patrol aircraft, however, the new floatplane should not be discounted. It is also expected that Rex will be used against PT's, LST's and Allied small craft in general. Maximum speed is estimated at approximately 330 m.p.h. at 19,680 ft. Maximum range is about 1,200 statute miles, combat radius about 375 miles. Span is believed to be 39 ft., 5 in.; overall length (including float), 35 ft., 5 in. A second overall length of 33 ft., 3 in. has been reported. The manufacturer is Kawanishi.

Jap copy of the Storch, built on a smaller scale than the German Fieseler 156, has a 282-hp. radial engine and carries no armament. It is probably intended for surface reconnaissance and headquarters liaison work and might also be used for low-level photographic work against undefended areas. The Allied liaison plane, L-5, has fin and rudder that sweep gently into the fuselage, while the rudder of the Jap plane enters the fuselage at an angle. The L-5 has a rectangular tailplane and stubbier landing gear than the Jap Storch.

Radial engine Judy 33 has a top speed of 376 m.p.h. at 18,500 ft. and a climb of 3.6 min. to 10,000 ft. Its Kinsei 62 14-cylinder engine provides a 1,580-hp. take-off at sea level. The 33's performance is not substantially different from that of Judy 12.

Betty 34 is believed to have armament changes, an automatic fire-extinguisher system around the fuel tanks and rubber protection inside the under surface of the wings. A 13-mm. machine gun and 20-mm. cannon replace the 7.7-mm. nose and side guns.

Jack is out in at least three versions of the basic design, which the Japs call Raiden 11,

21 and 31. The main improvement in the latter versions seems to be added armament. Raiden 31 may have armor and protected fuel tanks. Its cockpit has been redesigned for bubble canopy (see p. 13) to give better visibility. Jack is primarily used for short-range interception.

Zeke 52 is now equipped with increased armament. Zekes were found on Iwo Jima with one 20-mm. cannon and one 13.2-mm. MG in each wing, and one 13.2-mm. MG in the starboard side of the cowl.

George 11 has been found with all four 20-mm. cannon set right in the wing, as contrasted with the package-gun arrangement shown in last month's *Journal*.

Tojo captured in the Philippines has two 40-mm. wing cannon, and two 12.7-mm. MG's in the cowl.

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FIGHTER



JAPAN

FRANK 1

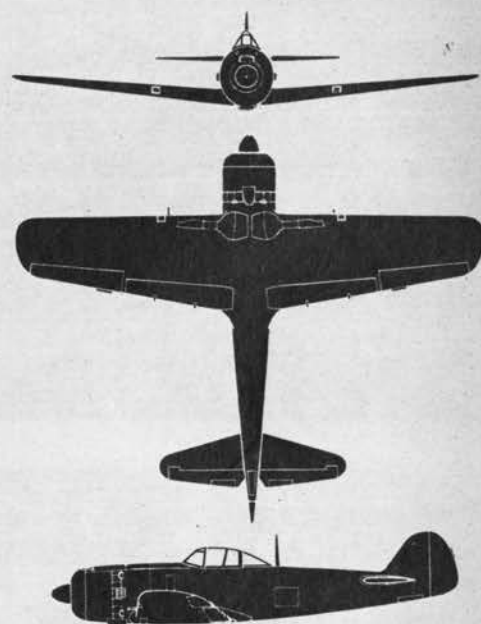


DISTINGUISHING FEATURES: Frank is a single-engine, low-wing monoplane, with a single fin and rudder. Its wing shape is similar to that of Oscar 2, and its oval fuselage, streamlined above and below, is broken only by blister cockpit. Wings show moderate dihedral; leading edge is straight, with tapered trailing edge. Tips are moderately raked. Fin and rudder, more rounded in appearance than those of other Japanese fighters,

resemble Tojo's. The fuselage extends beyond the tailplane which has considerable taper to its leading edge. **INTEREST:** More formidable than either Oscar, Tony or Tojo, Frank at present is the most outstanding Japanese army fighter. Self-sealing fuel and oil tanks, adequate armor, heavy firepower and a maximum speed in the 420-m.p.h. class contribute to its importance. It may carry a fuel tank or one bomb under each wing.

APRIL 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1



SPAN: 37 ft., 1 in.
LENGTH: 32 ft., 4 in.
APPROX. MAX. SPEED: 422 m.p.h.
SERVICE CEILING: 39,000 ft.

RESTRICTED

NOTE: This page is to be cut along dotted lines (above and below), added to the proper nation's section in the Recognition Pictorial Manual. The dots indicate perforations.

FIGHTER



JAPAN

GEORGE 11

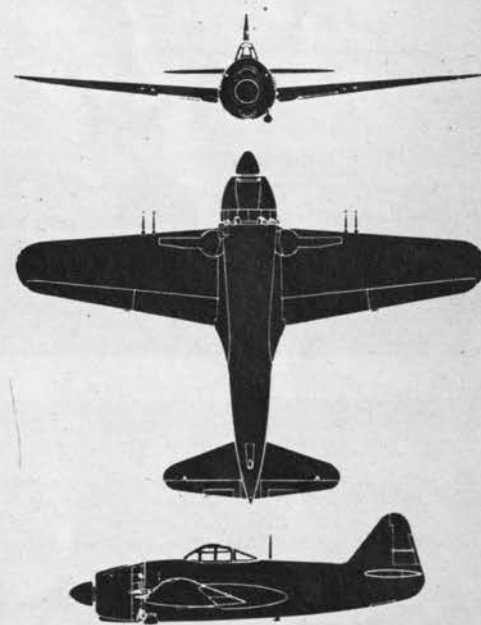


DISTINGUISHING FEATURES: A single-engine, low mid-wing monoplane with single fin and rudder, George has a fat oval fuselage which, unlike other Jap fighters, is thick throughout. Blister cockpit is set about midway between nose and tail. Wings have broad chord at root and greater taper to trailing edge; tips are rounded. Trailing edge is faired into fuselage. Leading edge of tailplane has decided taper; trailing edge is almost straight. Empennage resembles miniature

Betty. Low mid-set wings have dihedral from roots. **INTEREST:** George is fast, dangerous, maneuverable. It is the first Jap fighter to have fully self-sealing gas tanks, and its superior performance makes it very important to Japan's defensive plans. A Homare 21 1,970-hp. engine gives it a maximum speed of 407 m.p.h. at 19,600 ft. There are wing racks for small bombs. Armament consists of two 20-mm. cannon in each wing and two 7.7-mm. MG's firing through the propeller.

APRIL 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1



SPAN: 39 ft., 4 in.
LENGTH: 29 ft., 7 in.
APPROX. MAX. SPEED: 407 m.p.h.
SERVICE CEILING: 40,000 ft.

RESTRICTED

A



B



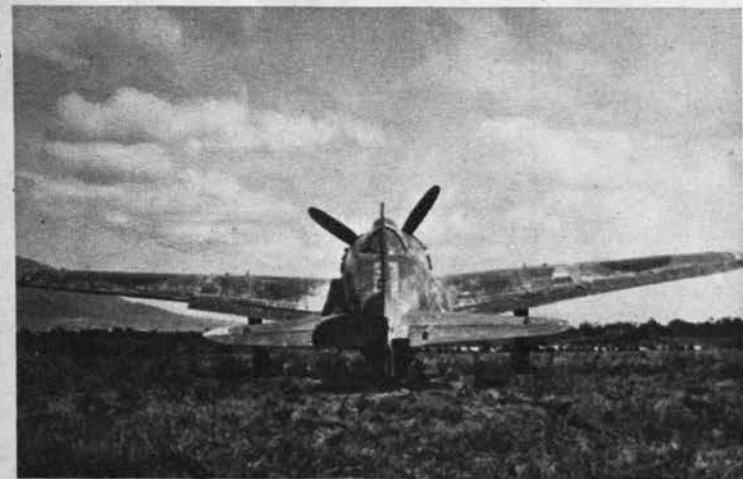
C



↑ **FRANK** played a major role in the defense of the Philippine Islands. It has two 12.7-mm. MG's firing through the propeller, and one 20-mm. cannon in each outboard wing section. The tailplane is set high with a small bite on the trailing edge.

GEORGE, known to the Japanese navy as "Shiden," or "Violet Lightning," is the most heavily armed single-seat Jap fighter yet seen. Since no arrester hook has been found on Georges recovered so far, it is believed they were not for carrier use. ↓

A



B



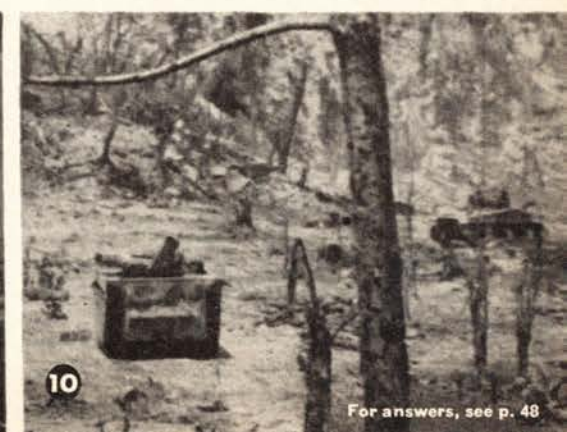
C



D



QUIZ NO. 4: ARMOR IN ALL THEATERS



QUIZ NO. 5: THIS MONTH'S SILLOGRAPHS



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15

JUN 11 45

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JOURNAL



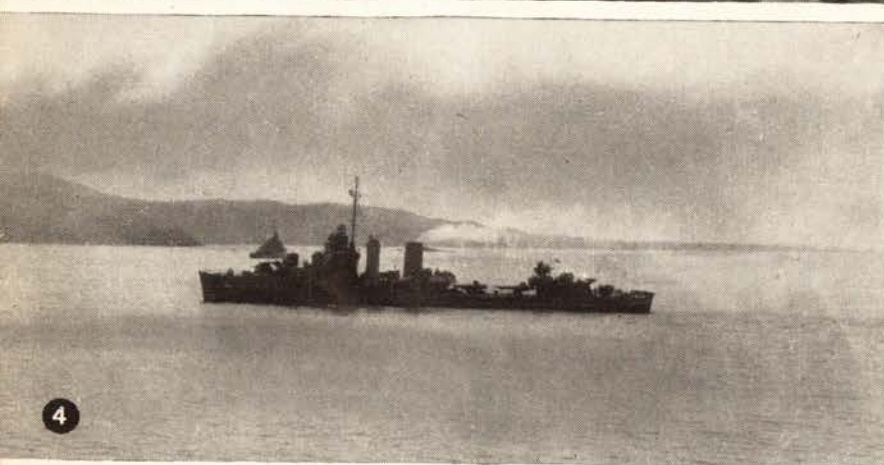
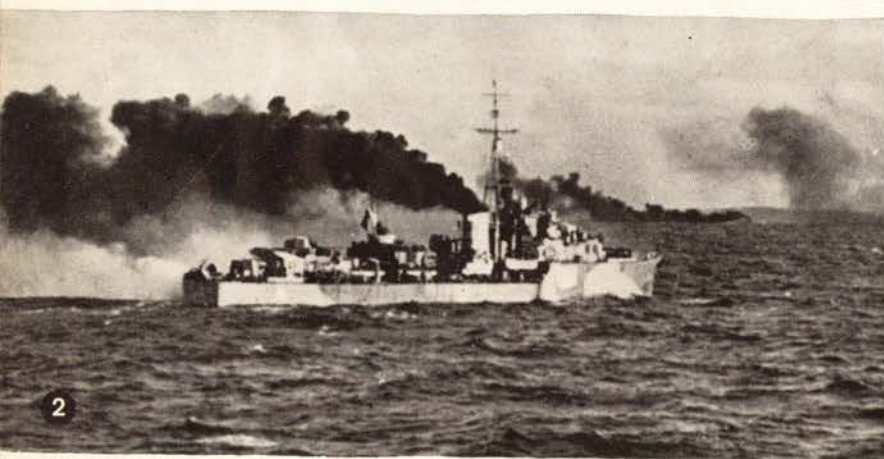
ZEKE

~~RESTRICTED~~
JUNE, 1945
NUMBER 22

WAR DEPT.
NAVY DEPT.



QUIZ NO. 1: DESTROYERS IN THE PACIFIC



6 RESTRICTED

RECOGNITION

NUMBER 22

JUNE, 1945

JOURNAL

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BACK FROM TOKYO, B-29 CREWS TELL INTELLIGENCE OFFICERS WHAT THEY SAW. THESE REPORTS WILL HELP FORM PLAN FOR NEXT ATTACK

IT ALL ADDS UP

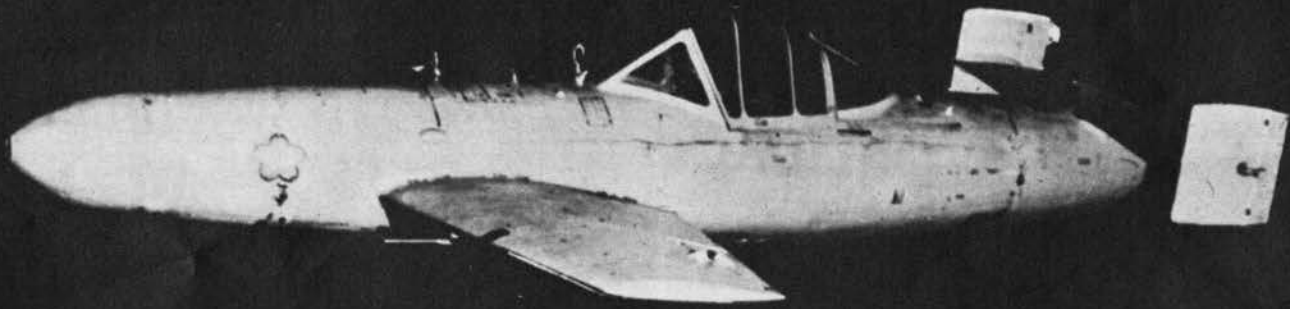
The men who do the actual fighting are an excellent source of intelligence for any armed force. They are the men who must compete directly with the enemy's troops and equipment. They are the men who know what the enemy can do. On their ability to report this knowledge to their intelligence officers depends to a large extent the accuracy and fullness of our estimate of the enemy. In this respect, recognition is an intelligence weapon.

But the combat man rightly considers his first job to be fighting. A pursuit pilot flying on operations has a big complicated machine to handle. He must always keep his eye peeled for enemy air activity. When he sees a plane in the distance he must turn to investigate it, at the same time estimating range, calculating lead, and preparing to shoot it down if it proves to be enemy. As he closes rapidly all he wants to know is—is it friendly or enemy? When he has made that decision, he is ready to open fire. The determination of type and model is second-

ary. If he shoots down his foe, he has won his personal battle.

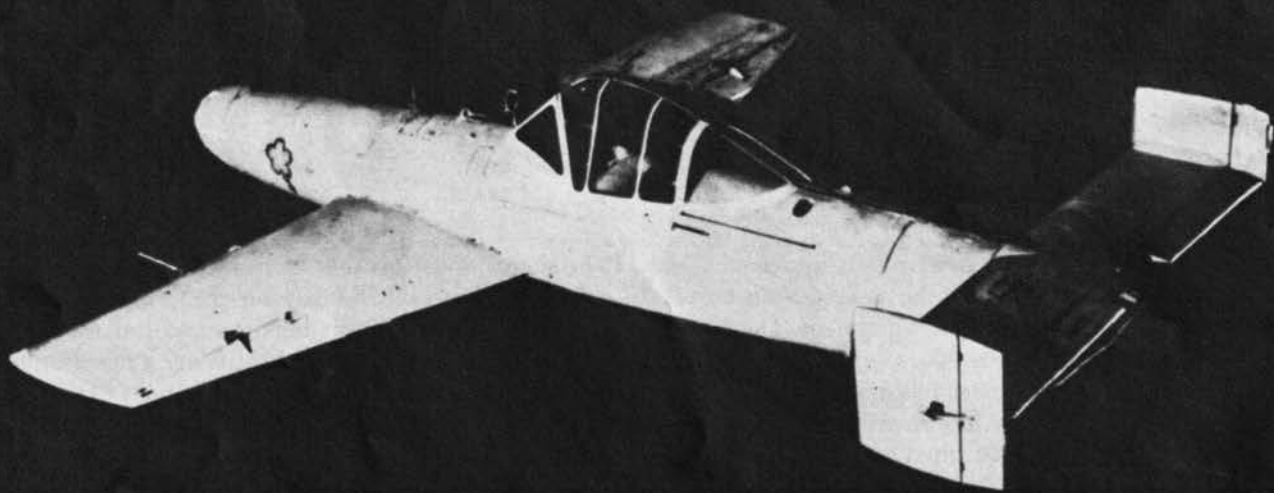
In doing this, however, he may sacrifice overall strategy for immediate tactics. Though it is important to destroy individual enemy planes, in the greater battle it is even more important to know what the enemy is and what equipment he has. In the early days of the Philippine campaign numerous Oscars were reported shot down. Later study proved that many of them were the new and highly effective Frank. Though our losses were not extreme, they could have been less if our men had been prepared to meet this hot competitor. In their faulty recognition, the pilots who reported Oscars did their fellows a disservice.

Nor is the fighter pilot the sole offender; his co-combatants on land and sea make the same error in the heat of battle. In so doing they rob intelligence of much significant information. Many weapons are needed to win this war. Intelligence, and recognition as a part of intelligence, is one of the most vital.



Japanese flying coffin, the Baka rocket bomb has a long nose, short low mid-wing and a large bubble-type canopy for its doomed occupant.

High-set tailplane and twin fins and rudders are rectangular. Three rocket-propulsion tubes project slightly behind the open tail cone.



BAKA BOMB

Rocket propulsion features Japan's latest suicide weapon

One of the war's most bizarre weapons is the rocket-driven suicide bomb which the Japanese have recently introduced. Named Baka by U.S. forces, after the Japanese word meaning fool or idiot, it is the logical extension of the suicide crash-dive idea long practiced by the Japs' Kamikaze corps. It is a short-range jet-propelled aircraft which must be carried and launched by Betty and possibly by other Jap bombers, Peggy, Sally, Helen, Liz or Rita.

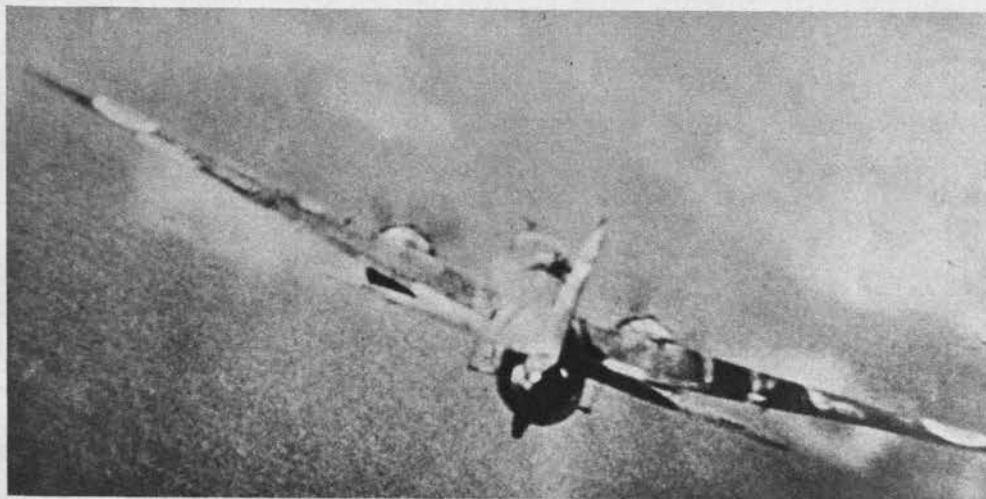
The idea of such a missile is not original with the Japanese. The Germans used three such devices, the Do-217 with its radio-controlled Hs-293 glider bomb, the V-1-launching He-111, and the Me-109-Ju-88 pickaback combination. But in no case did the Nazis doom an airman to an explosive death behind one of their warheads.

The Japanese flying bomb is small and fast and looks easy and cheap to build. The warhead, which contains over 1,000 lb. of explosive, occupies the entire nose section ahead of the stubby

wing. The pilot, who sits with his legs extended over the plywood wing, is protected by armor plate from behind and below, evidently to keep him alive until he can ram his target. Directly behind the rear armor plate are three rocket units which propel the bomb. Their exhaust squirts out through the open tail cone which is cut to slant forward and down.

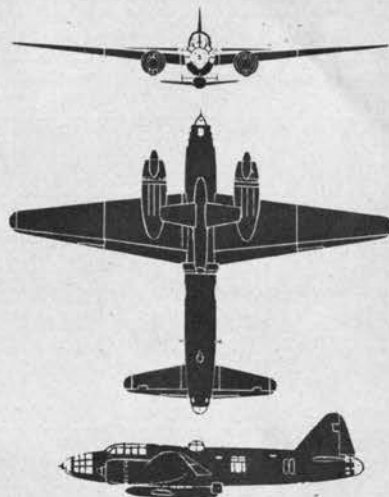
Without landing-gear or armament, Baka is dependent on a mother plane to carry it within range of its target. Its maximum range is approximately 55 miles. Its speed, however, is estimated to be over 500 m.p.h. in level flight and more than that in a dive.

Despite its human pilot, the defense against the 4,500-lb. Baka must be much the same as that for the V-1 ro-bomb. The best time to destroy it is before it is launched. U.S. fliers should therefore study its appearance on Betty, only airplane known to have carried it, as well as on the other planes (right) which may send it on its suicidal course.

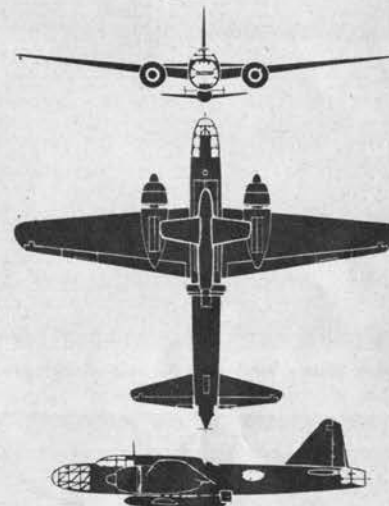


Baka's fins and rudders can be seen on either side of parent Betty's fuselage (top). Lower picture shows the prominent canopy. Note the simple ring and post sight atop the fuselage.

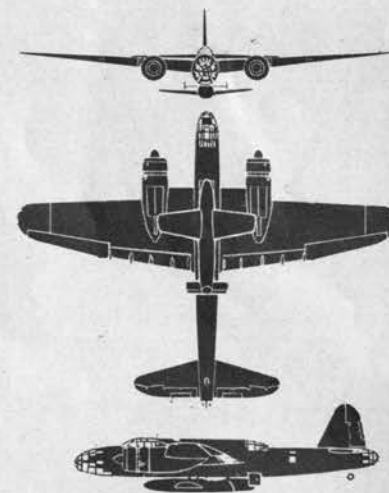
POSSIBLE BAKA CARRIERS



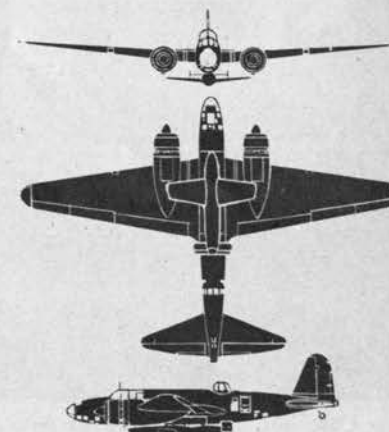
BETTY



PEGGY



HELEN



SALLY



SOME B-17s IN PACIFIC ARE USED FOR AIR-SEA RESCUE, CARRY A LIFEBOAT UNDER FUSELAGE AND HAVE A RADOME IN PLACE OF CHIN TURRET



New Catalina, PBV-6A, has the tall tail of the PBN without incorporating latter's longer, more pointed nose. Prominent teardrop-shaped

radome is mounted over navigator's compartment. Changes do not, however, affect Cat's basic features: parasol wing, wide shallow hull.



NEW LIBERATOR EXPRESS IS THE RY-3. ADAPTED FROM PB4Y-2, IT HAS NO TURRETS, OTHERWISE SHOWS CLOSE RESEMBLANCE TO PARENT PLANE

PLANES GET NEW TASKS

The wealth of standard types available to the Allied air forces has made possible the adaptation of several of them to specific new tasks. Among the planes which now may be seen in altered guise are the B-17, PB4Y-2, Lancaster, Wellington and PB4Y. In the Pacific the Flying Fortress is being used for air-sea rescue. For this it carries a large lifeboat beneath its hull to be dropped by parachute to downed airmen. RAF Coastal Command has used a specially fitted Wellington XIV for anti-sub patrol. This version has a chin radome and a Leigh Light in its bomb bay.

Just as the C-87 was developed from the B-24, so a new cargo plane, the RY-3, has been adapted from the PB4Y-2. The same basic airframe is used for both, but the transport is cleaned up, lacks such appendages as turrets and blisters. Similar treatment has been given Britain's Lancaster to create a high-speed transport. The resulting airplane is a sleek fast-looking craft called the Lancastrian. Though not a new plane, the PB4Y-6A has adopted some of the changes manifested by PBN.

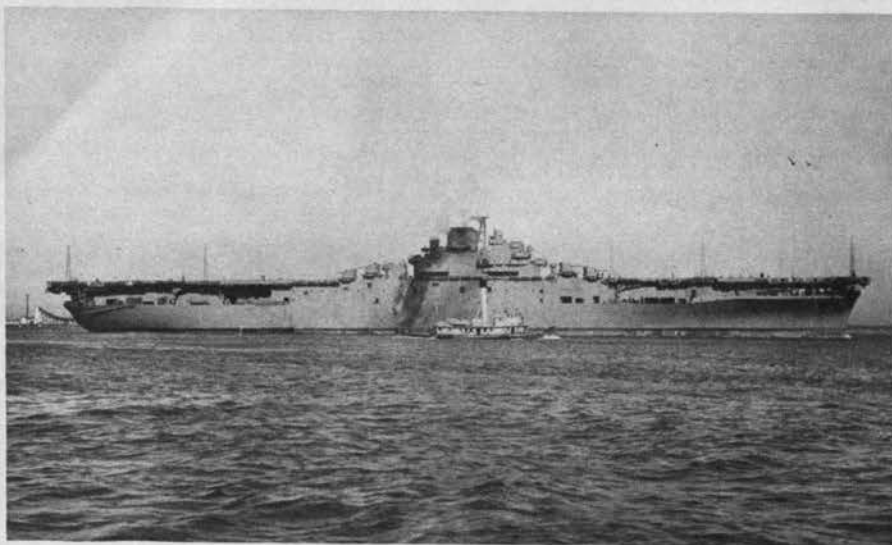


Avro Lancastrian, more than the York, can be called a transport version of the Lancaster. Stripped of nose and tail turrets, it retains Lancaster's mid-wing and twin fins and rudders.



Wellington XIV has no nose turret but carries a radar installation under the chin. A retractable Leigh Light, which is used on search and patrol missions, is carried in the bomb bay.

ESSEX CLASS HAS NEW BOW, STERN



U.S.S. Essex, first unit in class, shows original Essex design (1942 photograph). Flight deck slightly overhangs the raked bow, extends beyond the rounded stern.



New spoon bow on U.S.S. Hancock looks clipper in beam view, flares out into broad, rounded platform at top. Bow and stern project beyond ends of flight deck.

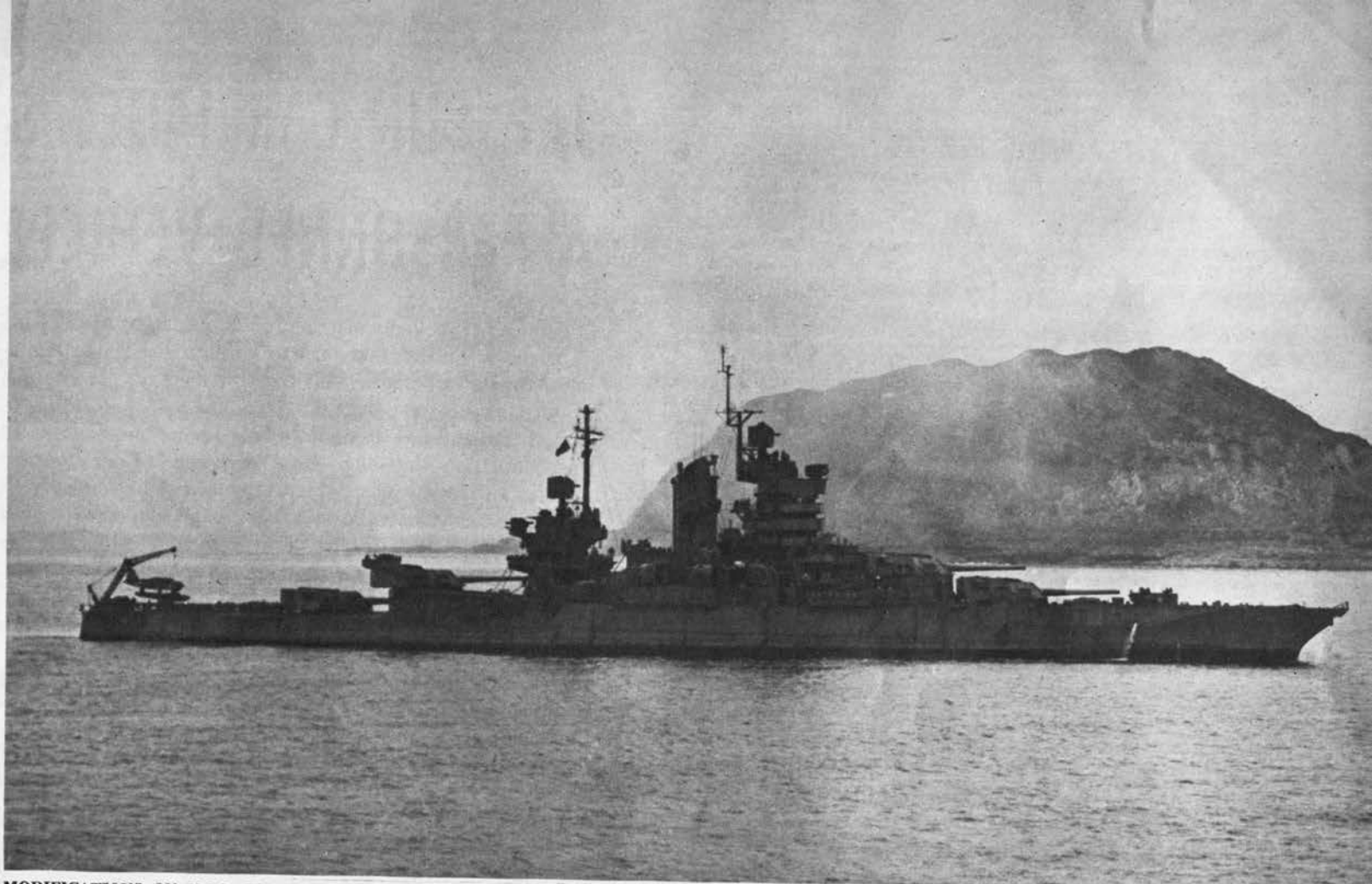
Most modern and successful of operational carriers, the U.S. Essex Class has nevertheless been modified in the light of its long battle experience. In common with most wartime ship modifications, the Essex revisions are to increase AA protection. On carriers this can be a rather difficult job. The ship must be protected from enemy bombers coming in at all angles, yet the great area of the flight deck must be kept free from obstruction and local wind currents. Consequently there is little space for additional guns in some positions.

On the Essex Class, one such problem was to set up more automatic AA covering the bow and stern approaches. Sponson platforms are provided by a "bustle," or faired projection, fitted to the stern (*below*) and the new spoon bow found on recent Essex units (*left*).

At this time, the changes are not standard for the class but differ among the various ships. The stern projection can be added to all units, but the spoon bow must be incorporated into the design during construction. Initially, flight decks were cut off at both ends to provide more clearance for the new sponsons, but are now being restored to original length. Since the number of Essex Class ships makes them the most important carriers afloat, these bow and stern changes, though not radical, are significant.

STERN CLOSE-UP OF U.S.S. BUNKER HILL SHOWS "BUSTLE" GUN POSITION. BUILT OUT SMOOTHLY FROM STERN, IT SUPPORTS AUTOMATIC AA





MODIFICATIONS ON U.S.S. IDAHO ARE NOT RADICAL BUT BRING INCREASED FIREPOWER, SLIGHT STRUCTURAL CHANGE TO OLD BATTLESHIP

WARSHIPS SHOW MODIFICATIONS

Warship modifications either bring an old craft up to date or create new types from old. LSM(R)-188 Class (*below*) illustrates the latter by virtue of its transformation from a personnel and vehicle carrier to a rocket-throwing assault

weapon. Modified Idaho (*above*) is simply an updating job. The addition of five single-gun AA turrets on either side greatly increases firepower, and the new funnel cap and overhang on after line of bridge are recognition features of the "new" ship.

DECK CLUTTERED WITH ROCKET LAUNCHERS AND CLEARLY VISIBLE 5-IN. DUAL-PURPOSE GUN IN SINGLE AFTER TURRET MARK THE LSM(R)-194





New SP gun is mounted on the Model 97 medium tank chassis. The fighting compartment is set slightly forward of the hull center line.



Familiar Model 97 chassis also carries 150-mm. howitzer, recently recovered on Luzon. Mount on right of vehicle may be for MG.

JAP GUN CARRIAGES & A PERSONNEL VEHICLE

These self-propelled guns, the first known to be used by the Japanese, indicate that our enemy in the Pacific is attempting to expand and improve his armor to meet the potent force of our superior weapons.

Both gun and howitzer shown here are mounted on Model 97 medium tank chassis, with six bogie wheels (four mounted in pairs, two independently), three return rollers and a front driving sprocket. Like the tank from which they were derived these self-propelled weapons are extremely vulnerable because of light armor and absence of welded construction. The hull and turret plates are riveted.

The gun (*top left*) has pyramidal outlines; its shield is built in two sections which are stepped down to the hull. Heavy cradle and long-barreled gun (which probably is a high-velocity 75-mm.) are prominent in silhouette. The howitzer (*left*) has a more chunky appearance and its front plate cuts sharply into the hull with one clean sweep of steel. Recoil-cylinder housing is angular and stubby in profile and almost as long as the howitzer. This 150-mm. weapon weighs 15 tons, has a width of seven and a half feet and height of eight feet, is 18 feet long.

The personnel carrier (*below*) was not used by the Japs in any campaign before our return to the Philippines, but several have since been captured. Armor on these vehicles is vulnerable to .50-caliber fire, ranges from a quarter to an eighth of an inch; track is long and wide; maximum speed is around 35 m.p.h. Bows over carrier carry a canvas cover. The top is otherwise open with the exception of a small armored area over the driver's compartment. Performance is believed to be exceptionally good, and the addition of a high and low gear transfer case should increase range and power.



Latest personnel carrier improves on earlier Japanese models, will seat 24 men. It is armored on all sides, fully tracked and powered

by a six-cylinder diesel engine. Suspension has four evenly spaced bogie wheels, two small return rollers and a rear drive sprocket.



RESTING BETWEEN COMBAT TOURS, SAILORS ARE RECEIVING RECOGNITION INSTRUCTION ON THE SFTC'S LST. NOTE PROJECTOR AND SLIDES



Navy trainees go up the side of Training Command's converted LST for a session of intensive instruction in recognition and antiaircraft gunnery.

SEVENTH FLEET HAS A SEAGOING SCHOOL

Following amphibious units into advance bases on New Guinea and in the Philippines, the mobile antiaircraft and recognition schools of the Seventh Fleet Training Command have taken recognition training right out to the war's most forward areas. There on the spot training outfits have already done a great deal to give combat crews a welcome refresher in both gunnery and recognition.

Crews wishing to avail themselves of the training can either come aboard the SFTC's private LST, if it is in the area, or they can request instruction on their own ships or at shore bases. If circumstances permit, an SFTC "salesman" may be on hand to meet flotillas or individual ships appearing at the various fleet anchorages to inform the crews that instructors and equipment are available.

In addition to sharpening the recognition facility of the officers and men, SFTC teams are spreading their work by turning out enlisted instructors. These instructors, who take a 13-day course in place of the standard five-day one, can then help train men on ships and in areas not yet reached by SFTC teams. More than once the men studying recognition have had for a final examination a practical workout on raiding Jap planes right from the floating classroom.

AIRCRAFT RECOGNITION TRAINING LIST ~~RESTRICTED~~

THESE LISTS ARE DESIGNED MERELY TO GUIDE RECOGNITION TRAINING IN AIRCRAFT AND ARE NOT TO BE CONSTRUED AS SUPERSEDING ANY PREVIOUSLY ISSUED DIRECTIVE. CLASS A COMPRISES AIRCRAFT THAT ARE OPERATIONALLY MOST IMPORTANT. CLASS B COMPRISES AIRCRAFT

THAT ARE OPERATIONALLY IMPORTANT IN SOME AREAS AND/OR ARE NUMERICALLY LESS IMPORTANT THAN CLASS A, AND ALSO AIRCRAFT WHICH, THOUGH NUMERICALLY IMPORTANT, ARE BEING GRADUALLY REPLACED. EMPHASIS SHOULD BE PLACED ON AIRPLANES IN CLASS A.

U. S. ARMY

CLASS A

DESIGNATION	COMMON NAME	TYPE
P-38	LIGHTNING	2E-SSF, R
P-47	THUNDERBOLT	1E-SSF
P-51	MUSTANG	1E-SSF, R
P-61	BLACK WIDOW	2E-NF
A-20	HAVOC	2E-LB
A-26	INVADER	2E-MB
B-17	FORTRESS	4E-HB
B-24*	LIBERATOR	4E-HB
B-25	MITCHELL	2E-MB
B-29	SUPERFORTRESS	4E-HB, R
B-32	DOMINATOR	4E-HB
C-46	COMMANDO	2E-C
C-47	SKYTRAIN	2E-C
C-54	SKYMASTER	4E-C
C-87*	LIBERATOR EXPRESS	4E-C
L-4**	GRASSHOPPER	1E-L
L-5**	SENTINEL	1E-L

CLASS B

DESIGNATION	COMMON NAME	TYPE
P-40	WARHAWK	1E-SSF
C-60	LODESTAR	2E-C
C-82	PACKET	2E-C
CG4A(CG15A)	HADRIAN	G

U. S. NAVY

CLASS A

DESIGNATION	COMMON NAME	TYPE
FM	WILDCAT	1E-SSF
F6F	HELLCAT	1E-SSF
F4U	CORSAIR	1E-SSF
F7F	TIGERCAT	2E-SSF, 2SNF
OS2U	KINGFISHER	1E-SO
SC	SEAHAWK	1E-SO
SB2C	HELLDIVER	1E-SB
SBD	DAUNTLESS	1E-SB
TBM	AVENGER	1E-TB
PBY	CATALINA	2E-PB
PV-1***	VENTURA	2E-PB
PV-2***	HARPOON	2E-PB
PBM	MARINER	2E-PB
PB4Y-2	PRIVATEER	4E-PB

CLASS B

DESIGNATION	COMMON NAME	TYPE
SOC		1E-SO
PB2Y	CORONADO	4E-PB
*RECOGNITIONALLY SIMILAR		
**RECOGNITIONALLY SIMILAR		
***RECOGNITIONALLY SIMILAR		

BRITISH RAF

CLASS A

DESIGNATION	COMMON NAME	TYPE
	SPITFIRE*	1E-SSF
	TYPHOON**	1E-SSF
	TEMPEST V**	1E-SSF

CLASS A

DESIGNATION	COMMON NAME	TYPE
	TEMPEST II	1E-SSF
	MOSQUITO	2E-2SF, LB
	BEAUFIGHTER	2E-2SF, TB
	LANCASTER***	4E-HB
	LINCOLN***	4E-HB
	SUNDERLAND	4E-PB

CLASS B

DESIGNATION	COMMON NAME	TYPE
	HURRICANE	1E-SSF
	WELLINGTON	2E-MB, TB
	WARWICK	2E-C, ASR
	HALIFAX	4E-HB
	STIRLING	4E-HB, GT
	YORK	4E-C
	HORSA	G

BRITISH ROYAL NAVY

CLASS A

DESIGNATION	COMMON NAME	TYPE
	SEAFIRE*	1E-SSF
	BARRACUDA	1E-TB
	FIREFLY	1E-2SF, R

CLASS B

DESIGNATION	COMMON NAME	TYPE
	SEA OTTER	1E-R
	SWORDFISH	1E-TB, R
*RECOGNITIONALLY SIMILAR		
**RECOGNITIONALLY SIMILAR		
***RECOGNITIONALLY SIMILAR		

U. S. S. R. ARMY

CLASS A

DESIGNATION	COMMON NAME	TYPE
YAK-9*		1E-SSF
LA-5		1E-SSF
IL-2	STORMOVIK	1E-LB
PE-2; PE-3		2E-DB, LB, F
SB-3		2E-MB
TU-2		2E-MB
DB-3F (IL-4)		2E-MB, TB
TB-7		4E-HB
PS-84 (Russian-built C-47)		2E-C

CLASS B

DESIGNATION	COMMON NAME	TYPE
LAGG-3		1E-SSF
YAK-1*		1E-SSF
MIG-3		1E-SSF
MIG-3 DEVELOPMENT		1E-SSF

U. S. S. R. NAVY

CLASS A

DESIGNATION	COMMON NAME	TYPE
MDR-6		2E-R
GST (Russian-built PBY)		2E-PB, R
KOR-1		1E-FP, R
*RECOGNITIONALLY SIMILAR		

AMERICAN AIRCRAFT USED BY SOVIETS

DESIGNATION	COMMON NAME	TYPE
P-39	AIRACOBRA	1E-SSF
P-40	WARHAWK	1E-SSF
P-47	THUNDERBOLT	1E-SSF
P-63	KINGCOBRA	1E-SSF
A-20	HAVOC	2E-LB
B-25	MITCHELL	2E-MB
AT-6	TEXAN	1E-N

BRITISH AIRCRAFT USED BY SOVIETS

DESIGNATION	COMMON NAME	TYPE
	HURRICANE	1E-SSF
	SPITFIRE	1E-SSF
	MOSQUITO	2E-2SF, LB

JAPANESE

CLASS A

DESIGNATION	COMMON NAME	TYPE
	GEORGE	1E-SSF
	FRANK	1E-SSF
	JACK	1E-SSF
	TONY	1E-SSF
	TOJO	1E-SSF
	OSCAR	1E-SSF
	ZEKE	1E-SSF
	NICK	2E-2SF, NF
	IRVING	2E-2SNF, R
	PAUL*	1E-RFP, DB
	JAKE*	1E-RFP
	DINAH	2E-R
	MYRT	1E-R
	JUDY**	1E-DB, R
	JILL	1E-TB
	GRACE	1E-TB
	LILY	2E-LB, DB
	FRANCES	2E-MB, NF
	BETTY	2E-MB, R, C
	HELEN	2E-MB
	PEGGY	2E-MB, TB
	EMILY	4E-PB, C

CLASS B

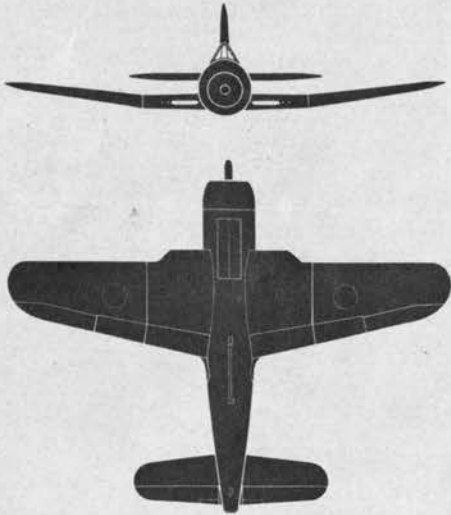
DESIGNATION	COMMON NAME	TYPE
	REX	1E-FP, SSF
	NORM	1E-FP, R
	RUFÉ	1E-FP, SSF
	PETE	1E-FP, R
	SONIA	1E-LB, R
	BABS	1E-R
	VAL	1E-DB
	KATE	1E-TB
	SALLY	2E-MB, C
	NELL	2E-MB, C
	LORNA	2E-PB
	TERESA	2E-C
	TABBY	2E-C
	TESS	2E-C
	TOPSY	2E-C
	THELMA/THALIA	2E-C
	THORA	2E-C
	LIZ	4E-PB, C
	MAVIS	4E-PB, C

*RECOGNITIONALLY SIMILAR
**COVERS JULY 11, 12 AND 33

ABBREVIATIONS

ASR..... AIR-SEA RESCUE	L..... LIAISON	LB..... LIGHT BOMBER	TB..... TORPEDO BOMBER
B..... BOMBER	N..... TRAINER	MB..... MEDIUM BOMBER	RFP..... RECCO FLOATPLANE
C..... CARGO, TRANSPORT	R..... RECONNAISSANCE	NF..... NIGHTFIGHTER	SS..... SINGLE-SEAT
F..... FIGHTER	DB..... DIVEBOMBER	PB..... PATROL BOMBER	2S..... TWO-SEAT
G..... GLIDER	FP..... FLOATPLANE	SB..... SCOUT BOMBER	1E..... SINGLE-ENGINE
GT..... GLIDER TUG	HB..... HEAVY BOMBER	SO..... SCOUT OBSERVATION	2E..... TWIN-ENGINE
			4E..... FOUR-ENGINE

NEW AND REVISED AIRPLANE SILHOUETTES



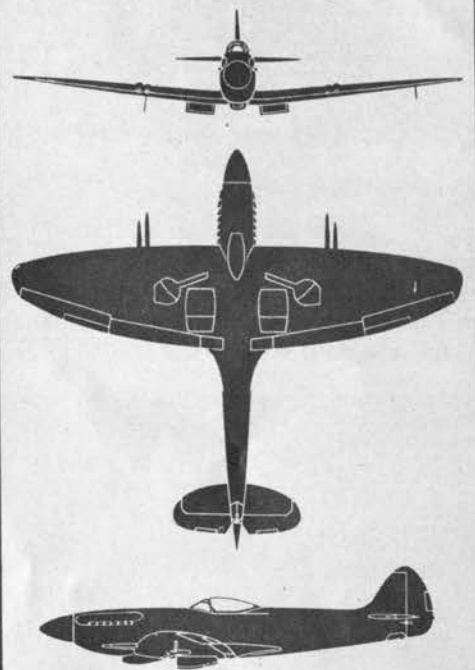
FR-1

SPAN 40 FT. LENGTH 31 FT. 8 IN.
NAVY'S SEMI-JET FIGHTER (PROVISIONAL)



RY-3

SPAN 110 FT. LENGTH 75 FT. 5 IN.
PB4Y-2 NOW MODIFIED FOR TRANSPORT USE

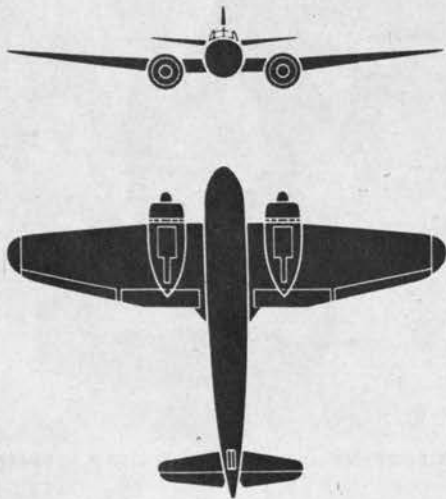


SPITFIRE 22

SPAN 37 FT. 4 IN. LENGTH 32 FT. 8 IN.
NEW CANOPY GIVES SMOOTH DORSAL LINE

Exciting Allied development is U.S. fighter, FR-1. Carrier-based, it uses propeller power for take-off and landing, jet unit for bursts of speed in the air. The RY-3, transport version of PB4Y-2, has

solid nose and tail, no side gun blisters or armament. Only change on Spitfire 22 compared to 21 is the addition of a bubble canopy which gives the plane a clean upper surface from nose to tail.



LORNA

SPAN 52 FT. 6 IN. LENGTH 39 FT. 5 IN.
JAP PATROL PLANE IS USED AGAINST SUBS



BAKA

SPAN 16 FT. 5 IN. LENGTH 19 FT. 10 IN.
JAP SUICIDE PLANE IS ROCKET-PROPELLED



TU-2

SPAN 61 FT. 10 IN. LENGTH 45 FT. 3 IN.
RED ARMY MEDIUM BOMBER (PROVISIONAL)

Jap Lorna, called Tokai by the Japs, is a plodding two-engine navy reconnaissance plane. Suicide plane, Baka (see pp. 4-5) has a cylindrical fuselage, stubby double-tapered wings and squarish fins and

rudders. It is carried under parent plane, discharged within 30 to 55 miles of target. TU-2, which may replace Soviet Pe-2, is a fast medium bomber with powerful armament, probably including cannon.



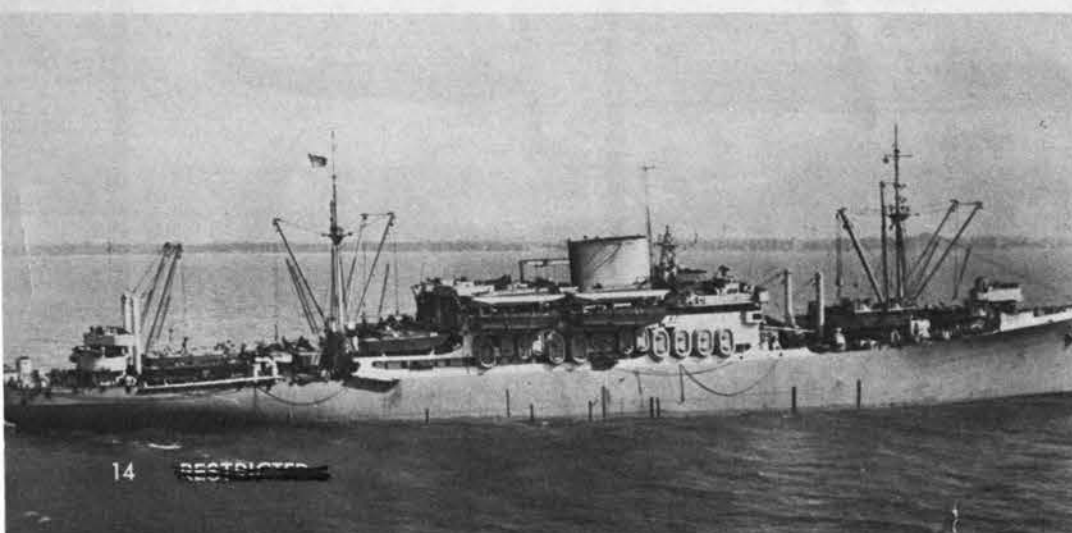
High-speed transport is the Navy's fastest assault troop carrier. A destroyer escort conversion, the trim APD is identified as such primarily by the landing craft it carries amidships.



Fleet tug (AT) has several functions during an invasion. It is used to maneuver LST's or LCI's which may be damaged, fight fires, salvage small craft or go to the rescue of personnel.



Two standard APA's (above and below) carry assault troops to the invasion waters. U.S.S. Drew (above) is largest standard type. Charles Carroll is old type first used in North Africa.



IMPORTANT AK'S ANCHORED NEAR A BEACHHEAD



DISCHARGE ASSAULT TROOPS AND CARGO INTO THE LANDING CRAFT WHICH WILL SHUTTLE SUPPLIES AND REINFORCEMENTS TO ADVANCING ARMY

INVASION SHIPPING

It keeps the beachhead supplied

Mass amphibious landings on distant coasts have become a vast and complicated business. The beachhead operations now taking place in the Pacific no longer follow the simple pattern of our original landings—assault by men of war and landing craft followed by auxiliaries and cargo vessels.

In the main, our early invasions were short hops from well-supplied bases. Assault ships simply debarked their men and were followed in by cargo ships which remained just long enough to discharge supplies, then shuttled back for more. The few ships that remained were not considered

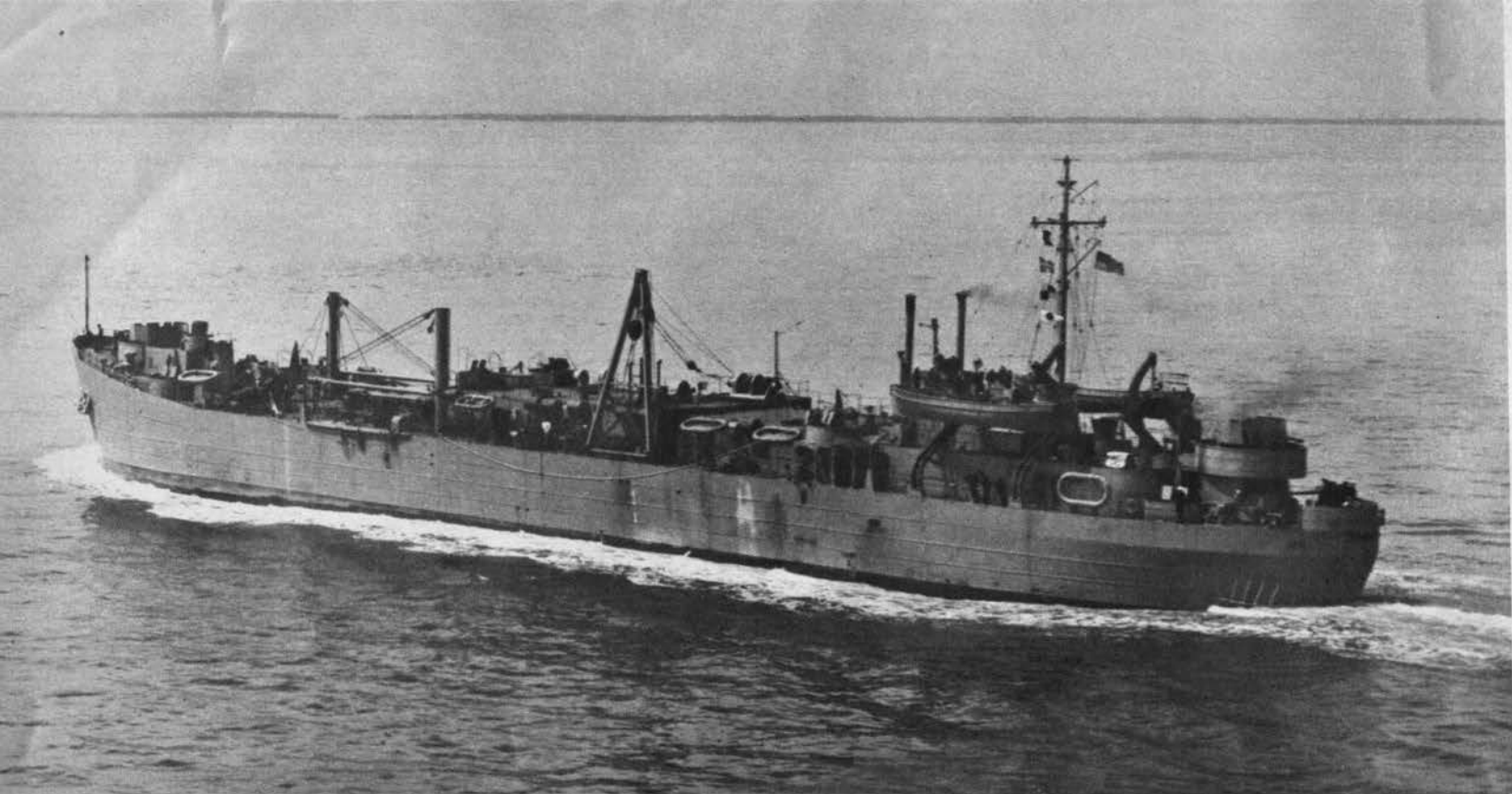
a necessary adjunct to the whole operation. Our lines of communication were short; supplies needed to maintain a small beachhead vanguard were within easy reach of our transports.

Now, however, our elastic supply lines have stretched to thousand-mile lengths; an invasion requires the transport of all the elements of military life. Ships must remain in the area for weeks to supply a mass of necessities once close at hand.

It is for this reason that the ships on these pages have come into operation. Most of them have highly specialized functions:

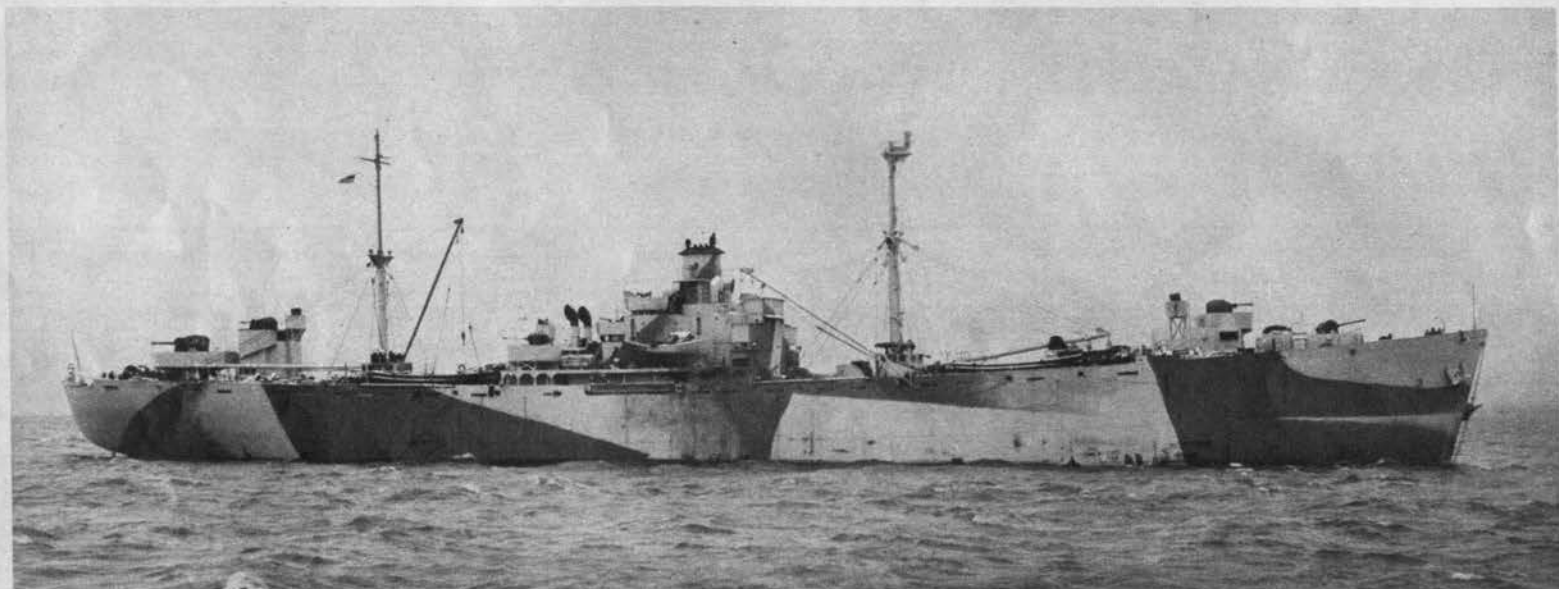
distilling water for troops, repairing small landing craft and evacuating the wounded. Many of them have shapes and silhouettes which are familiar. They have been converted from LST's, tankers and barges to meet the needs of a long-range war.

The presence of such an armada demands that all those working in ship-to-shore operations acquaint themselves with the purposes and functions of these varied ships. If they are recognized for what they really are, the vast business of supplying ammunition, food and reinforcements to our troops will be facilitated rather than delayed.



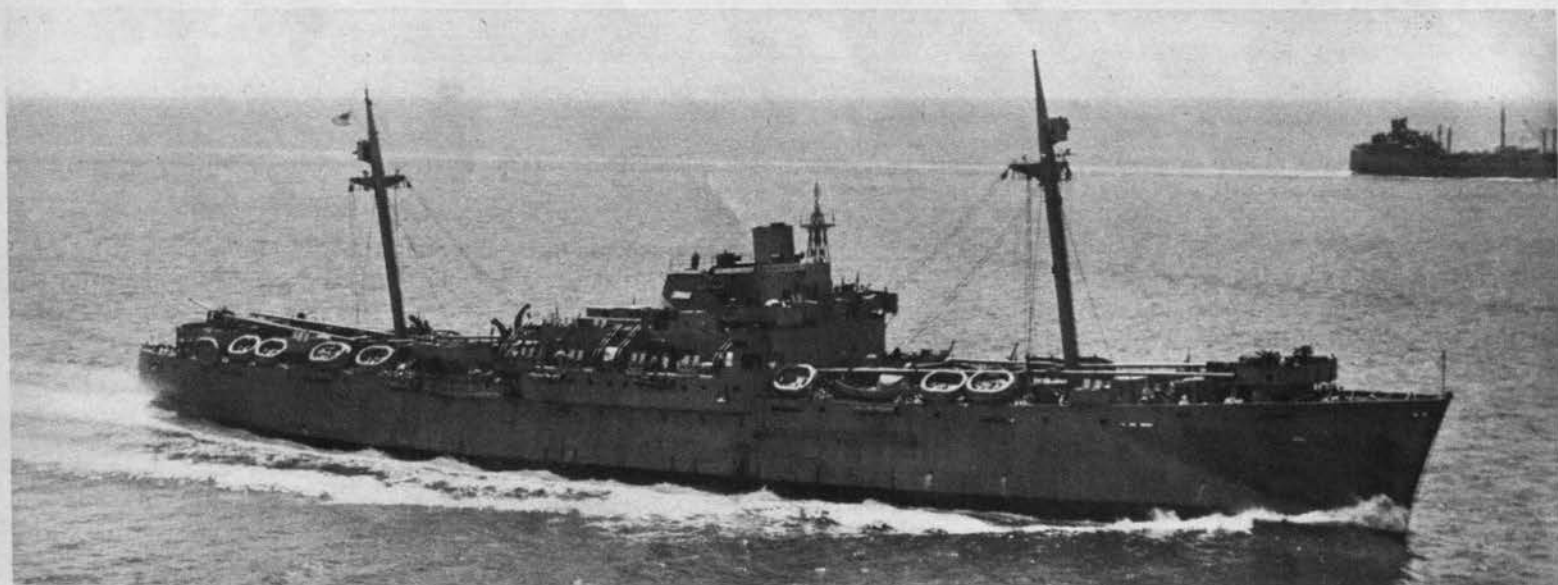
Auxiliary Repair Ship (ARL) shown above has been converted from an LST hull with deckhouse extended forward for additional workshop,

ramp removed, elevator changed into a hatch. It is equipped to provide extensive repair facilities for damaged landing craft in beachhead area.



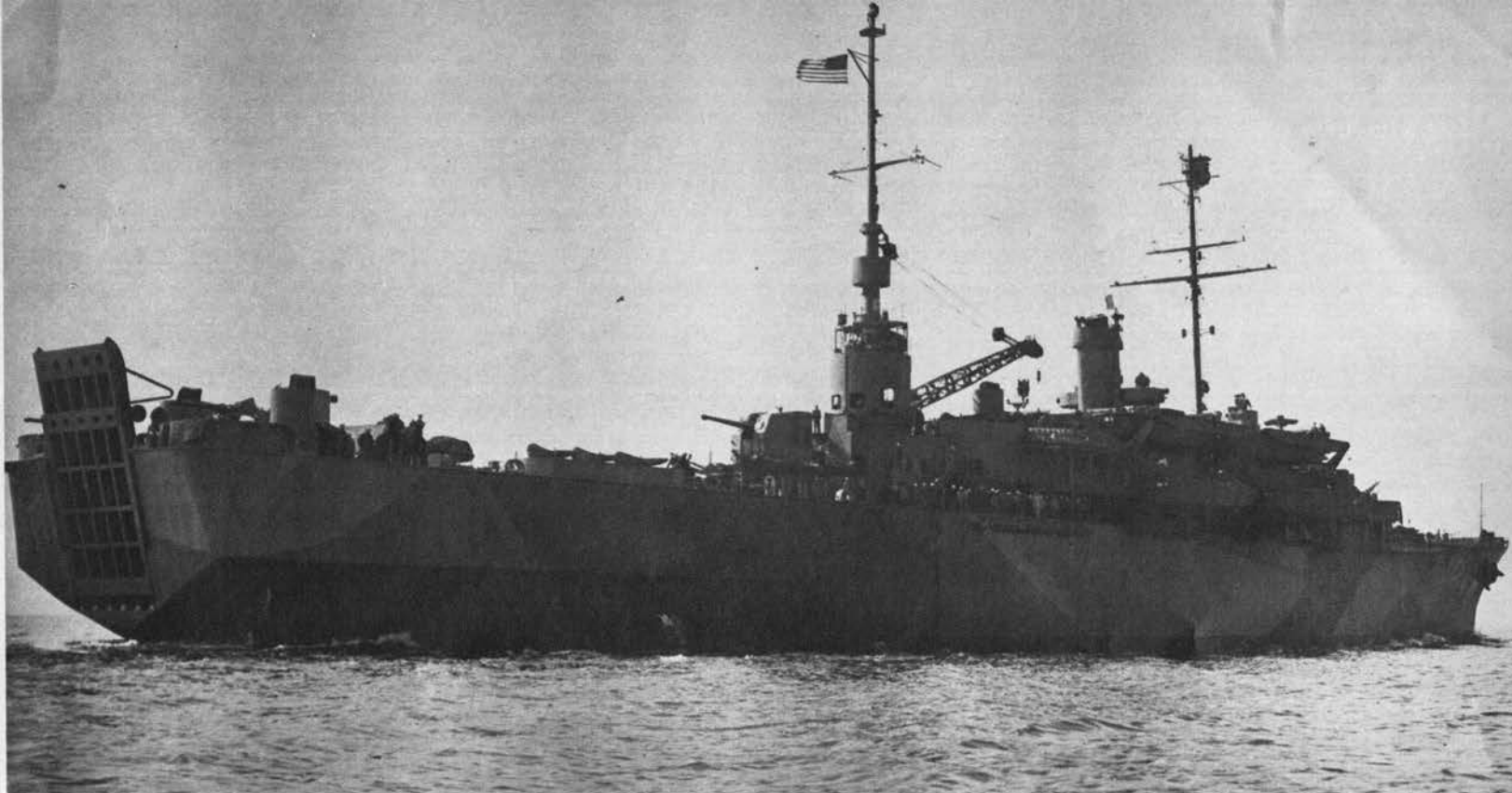
Silhouette of ARG, like most other invasion ships, shows the large number of hoists and booms needed to lift small landing craft aboard for

repair. Four gun emplacements and the choppy deck superstructure form broad-based triangle which is cut into fore and aft by tall masts.



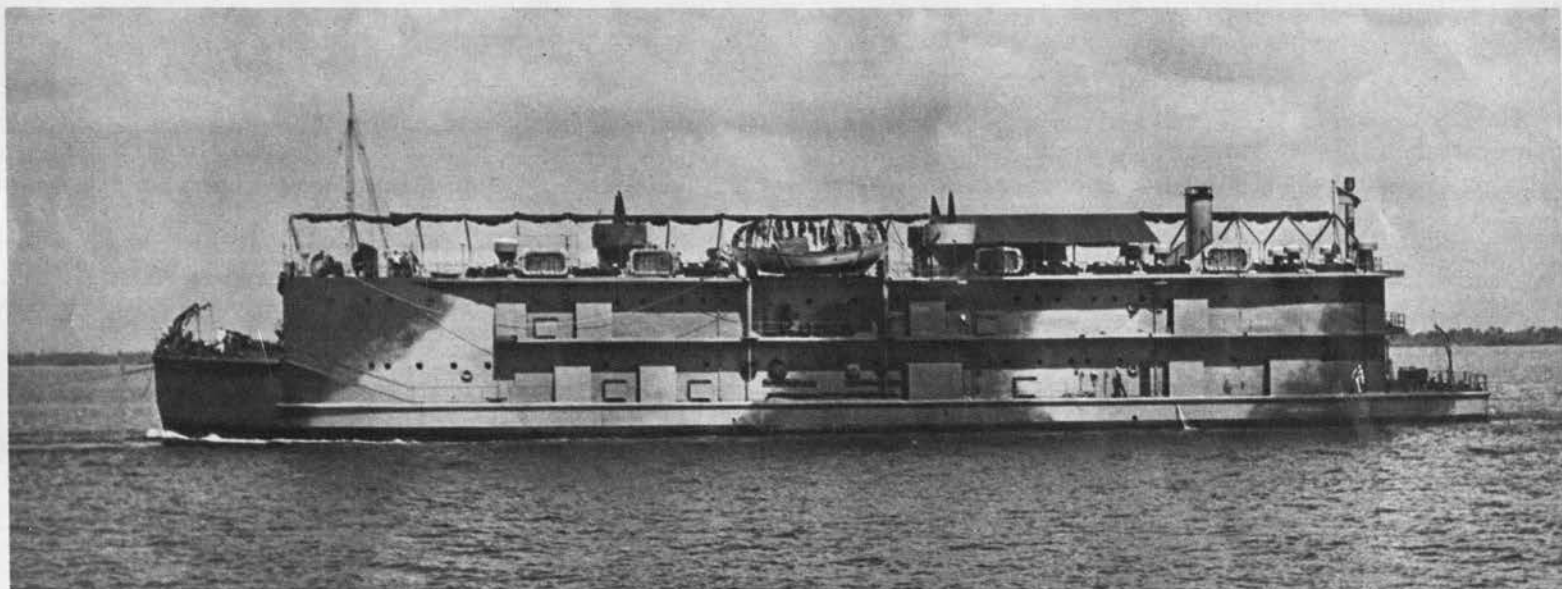
Broad-hulled APH has a low blocky superstructure and few other vertical elements projecting from its deck. With accommodations for

1,000 men, the APH does vital transport work as an auxiliary hospital ship for the evacuation of wounded after an invasion landing.



Recently developed LSV (Landing Ship, Vehicle) transports amphibious vehicles to an invasion area. Two versions exist: minelayer type

(above) and a netlayer conversion with two stacks. Both have heavy crane jutting from mainmast and squared stern with loading ramp.



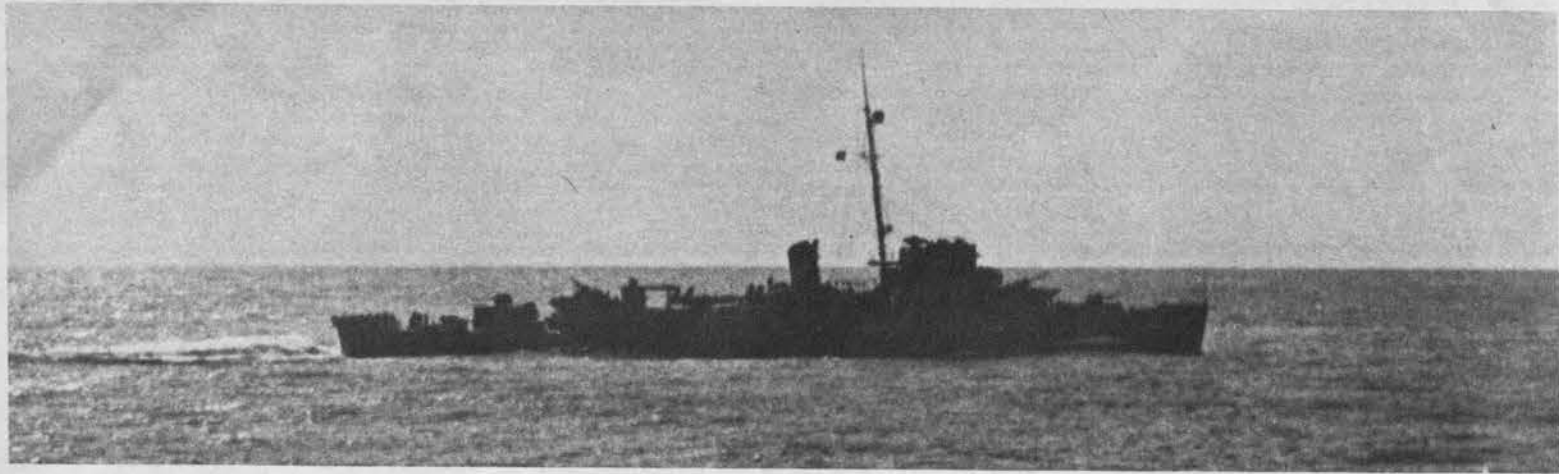
Barracks ship (designated an APL) has a distinctive silhouette which is square and boxlike. In post-invasion operations, this ship serves as

temporary quarters for emergency crews and workmen. Because of its unusual duty the APL has been given nickname of "floating hotel."



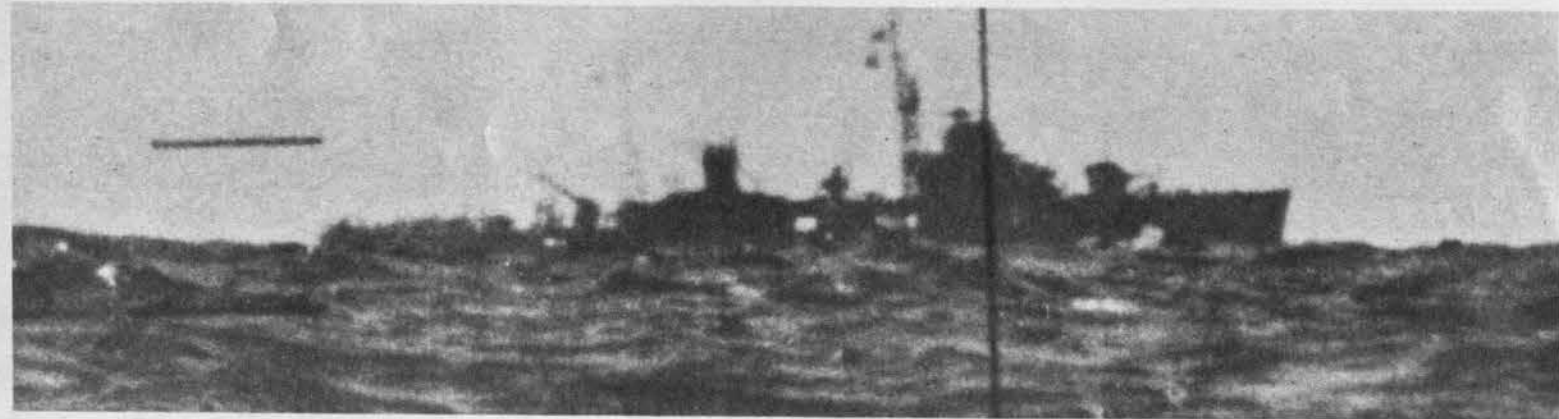
Supplying pure water to invasion troops is an important function of this auxiliary ship, an AW. Tall jimmy-legs crane between stack and

bridge can help load ships waiting alongside. Important recognition features are the after location of engine and broken line of the hull.



U.S. Buckley Class is 306 ft. long, suggests small destroyer in profile. Light stack (trunked on this version) rises from the continuous low

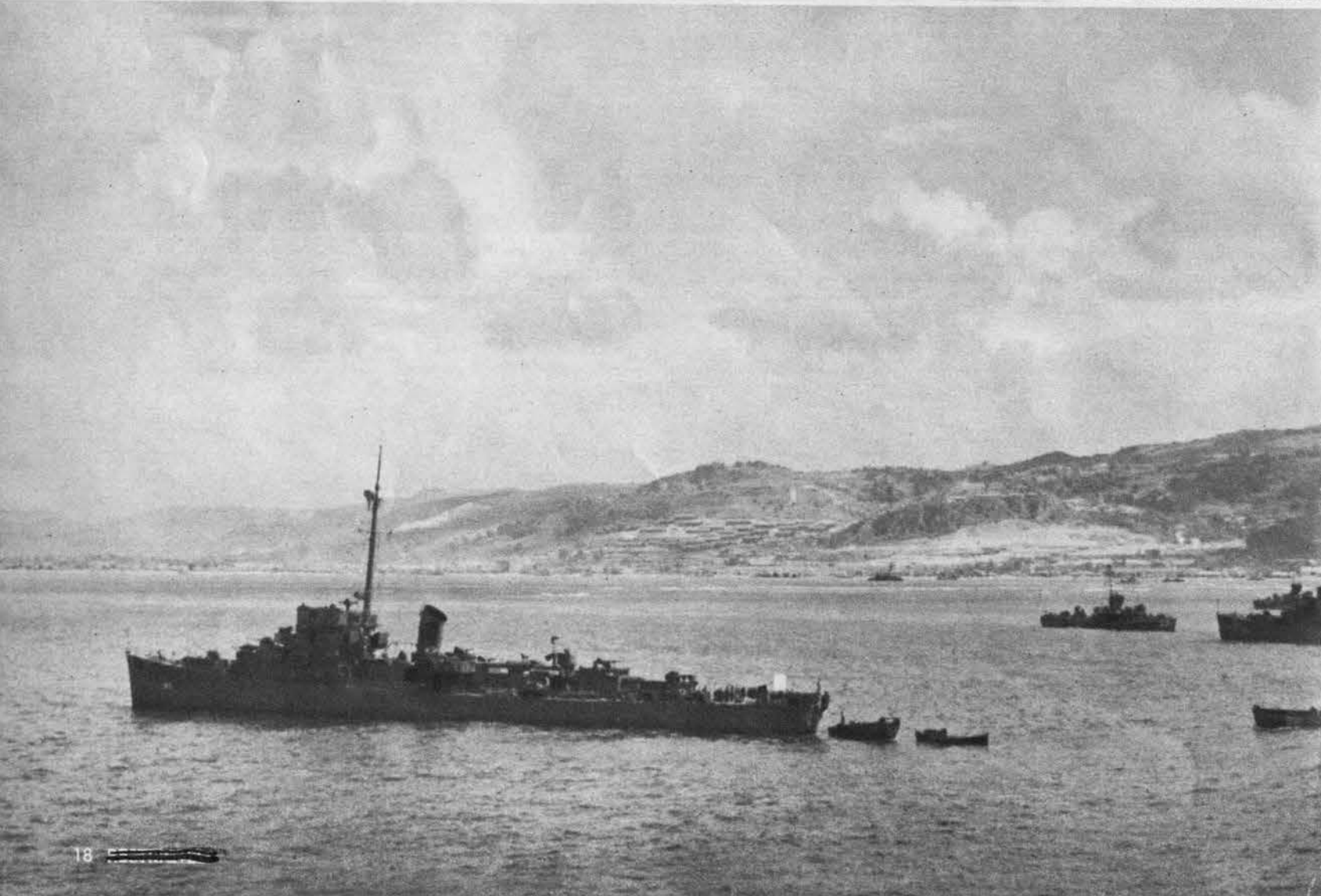
deckhouse amidships. Superstructure elements, including superfiring guns forward, are inconspicuous and at a distance blend together.



Jap DE UN-1 (name unknown as yet) has choppy outline in usual Jap style. Stack rises aft of amidships, is separated from bridge by distinct

gap in superstructure. Note long decks fore and aft, clear except for single gun mounts. The foremast and brief mainmast are both tripod.

OTHERWISE SIMILAR TO TRUNK-STACK MODEL DE (TOP OF PAGE), THIS VERSION OF U.S. BUCKLEY CLASS CARRIES A SINGLE PIPE STACK, NOTE LOFTY



U.S. DE VS. JAP ESCORT

The tremendous task of escort and patrol is borne in large measure by the smaller combatants of both Allied and enemy navies. Of these, destroyer escorts (DE) are the largest and perhaps most important. Hundreds of U.S.-built DE's are serving in our own and Allied navies, while Japan has recently emphasized this type in her small-craft building program.

Destroyer escorts approach destroyers in size and, though lighter in profile, are similar in appearance. Like other small warships, DE's are somewhat harder to recognize than large fleet units. However, the two main escort designs—U.S. DE's and Japanese DE UN-1—reflect their respective national styles of naval architecture.

Both are single stack, but the enemy vessel's stack is set aft of amidships in the manner of Jap subchasers. Superstructure rises abruptly from the foredeck in isolated elements, while the U.S. DE superstructure is spread out but composite. Finally, the Jap has the twin tripod masts in contrast to the U.S. single-stick style.

STICK FOREMAST. LOW OUTLINE ABAFT THE STACK



Head-on views contrast lightly shielded superfiring guns on U.S. DE's foredeck (above) with DE UN-1's large single gunhouse (below). U.S. main armament is three in., Japanese, 4.7 in. U.S. DE shown is of Evarts Class, shorter but essentially similar to Buckley Class.



HULL SHAPES

Major naval types differ in basic design and proportion

Hull shape is of fundamental importance to ship recognition from the air. Since it is the ultimate basis of naval design, the hull determines a ship's mass or total form. For example, the recognition student can better understand the essential differences in profile between a battleship and cruiser if he grasps the underlying contrast in hull shape; that is, superstructure height and the weight of the guns carried depend on the length and breadth of the hull on which they are mounted. Moreover, hull design is frequently the only means of identifying a ship from high altitudes flown by Army bombers. Army airmen often cannot see ships distinctly until their planes are directly overhead. From this angle superstructure details are obscured, leaving hull outline the only visible feature. At such heights, identification as to class or even nationality is next to impossible. However, accurate reports of type—carrier, destroyer, submarine, etc.—can be fitted into information patterns of great value by our intelligence centers.

As shown in the silhouette panel on the opposite page, the major warship types are very different in hull shape. This individuality results from the varied naval tasks for which the ships are intended. Tremendous beam marks the battleship which must serve as a stable platform

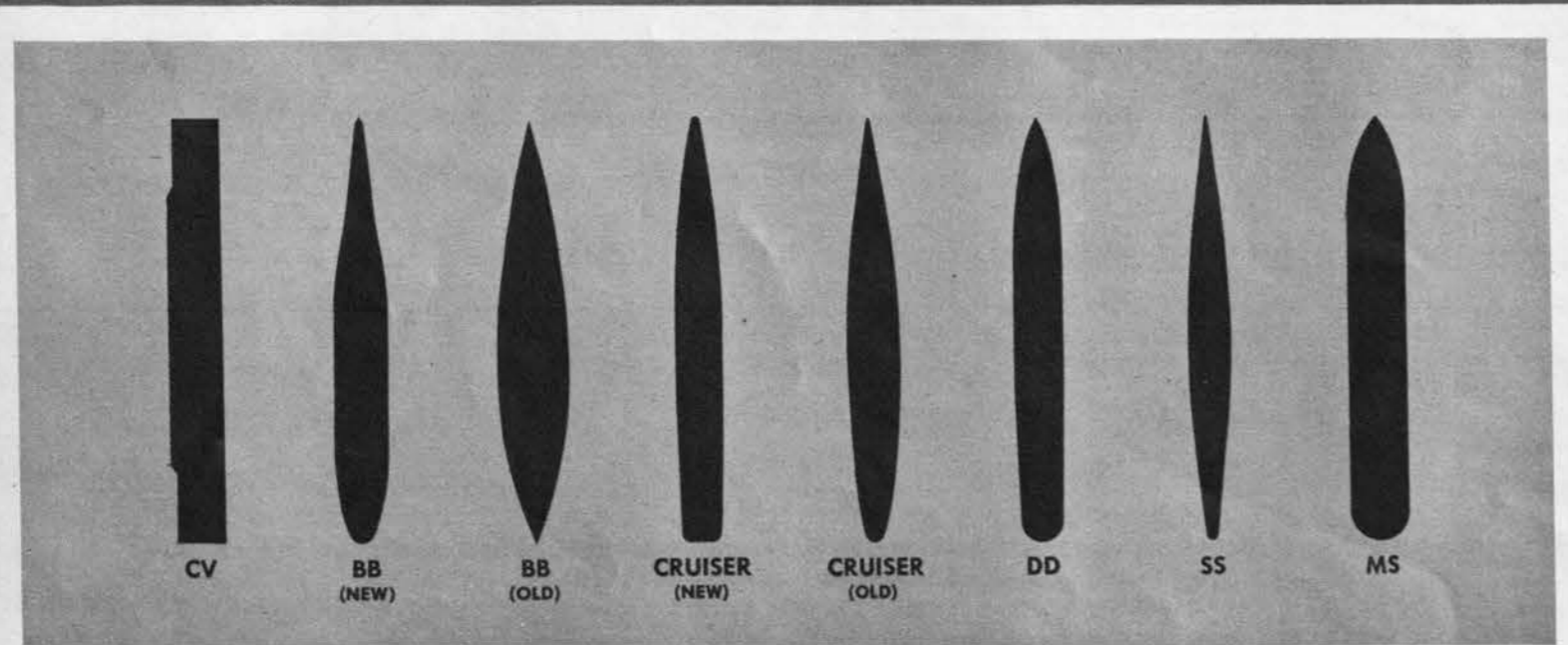
for the heaviest of guns, be thoroughly compartmented to withstand heavy caliber hits. Destroyers, on the other hand, must be extremely swift, maneuverable and easy to build in large numbers. Consequently, they are trim and compact with space and equipment cut down to a minimum. Specialized warships often deviate from the curved hull that characterizes ships in general. Essentially floating airstrips, carriers seen from above are given a rectangular plan by their visible deck surface.

It must be remembered that these silhouettes are only generalizations on the design of operational warships. The fundamental shape of a type undergoes many variations in different navies and different classes. Thus the more modern U. S. cruisers usually have transom, or squared-off sterns, while British and Japanese contemporaries retain the tapered stern of older cruisers. However, length-to-beam ratio (shown in silhouette panel below) remains much the same in different classes and nationalities and this rough proportion can be relied upon. Exact rules cannot be laid down, but by studying the silhouettes and the photographic examples shown on these and the following pages, the recognition student should get the feel of basic ship differences.



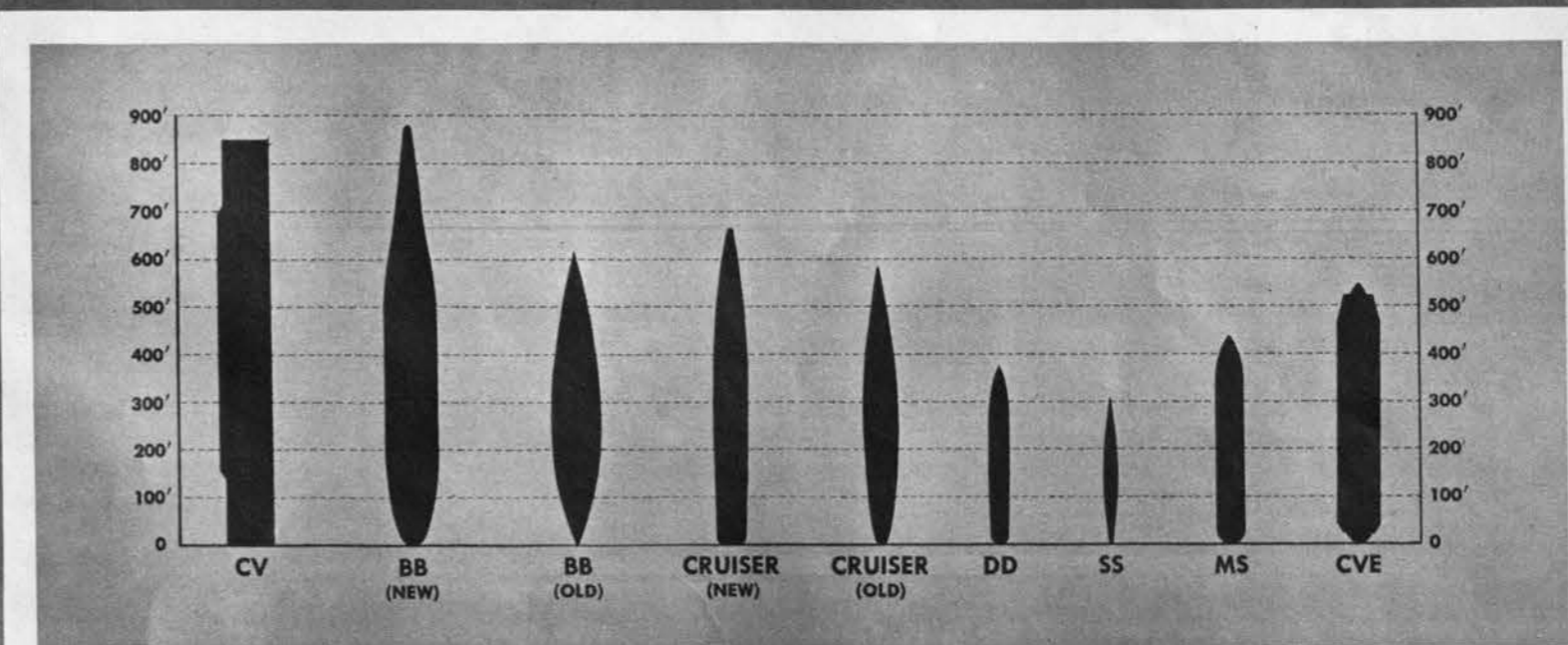
IOWA SHOWS LONG FORWARD TAPER, ROUNDED STERN OF MODERN BB. ALTHOUGH OVERSIZE, ALASKA (ABOVE) HAS GRACEFUL LINES OF CRUISER. NOTE

SLIM DE AND DD, STUBBY RECTANGLE OF CVE AT TOP



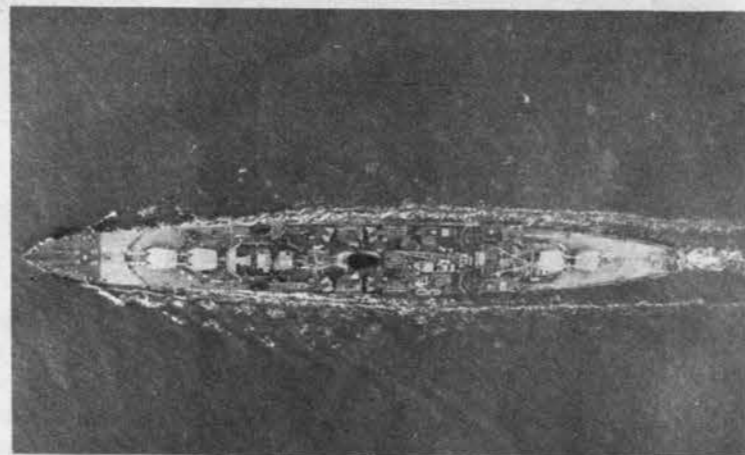
Hull shapes of the major naval types are shown by these outlines, all printed the same size for direct comparison. Escort carriers are

similar in shape to fleet CV's, but have proportionately broader beam. Bow and stern frequently project beyond ends of flight deck.

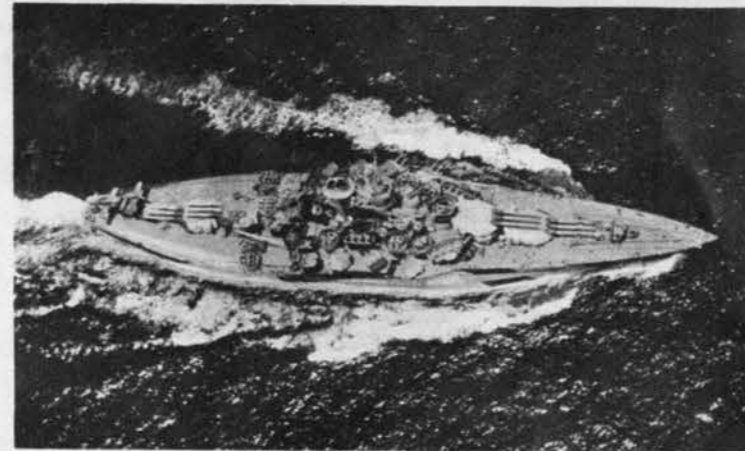


Length-to-beam ratio among main varieties of warships is shown in this silhouette panel. This is the best guide to the determination of

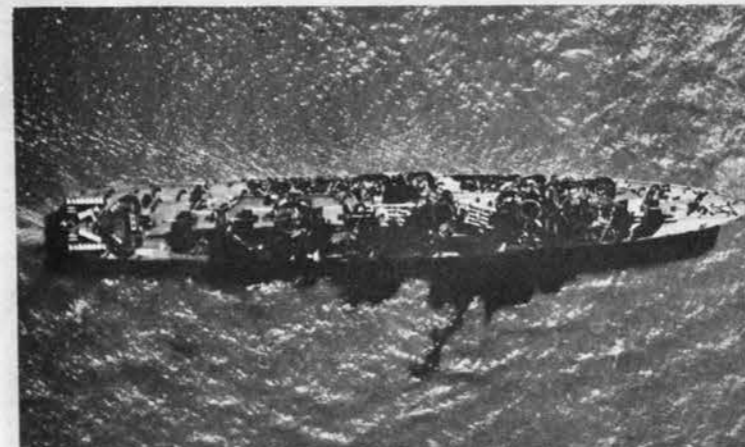
ship types. Relative size indicated is only an average and cannot be depended upon in all instances. Size may vary between classes.



Old cruiser's decks are shorter and less spacious than on new type (left). The sides are shallow curve from pointed bow to tapered stern.



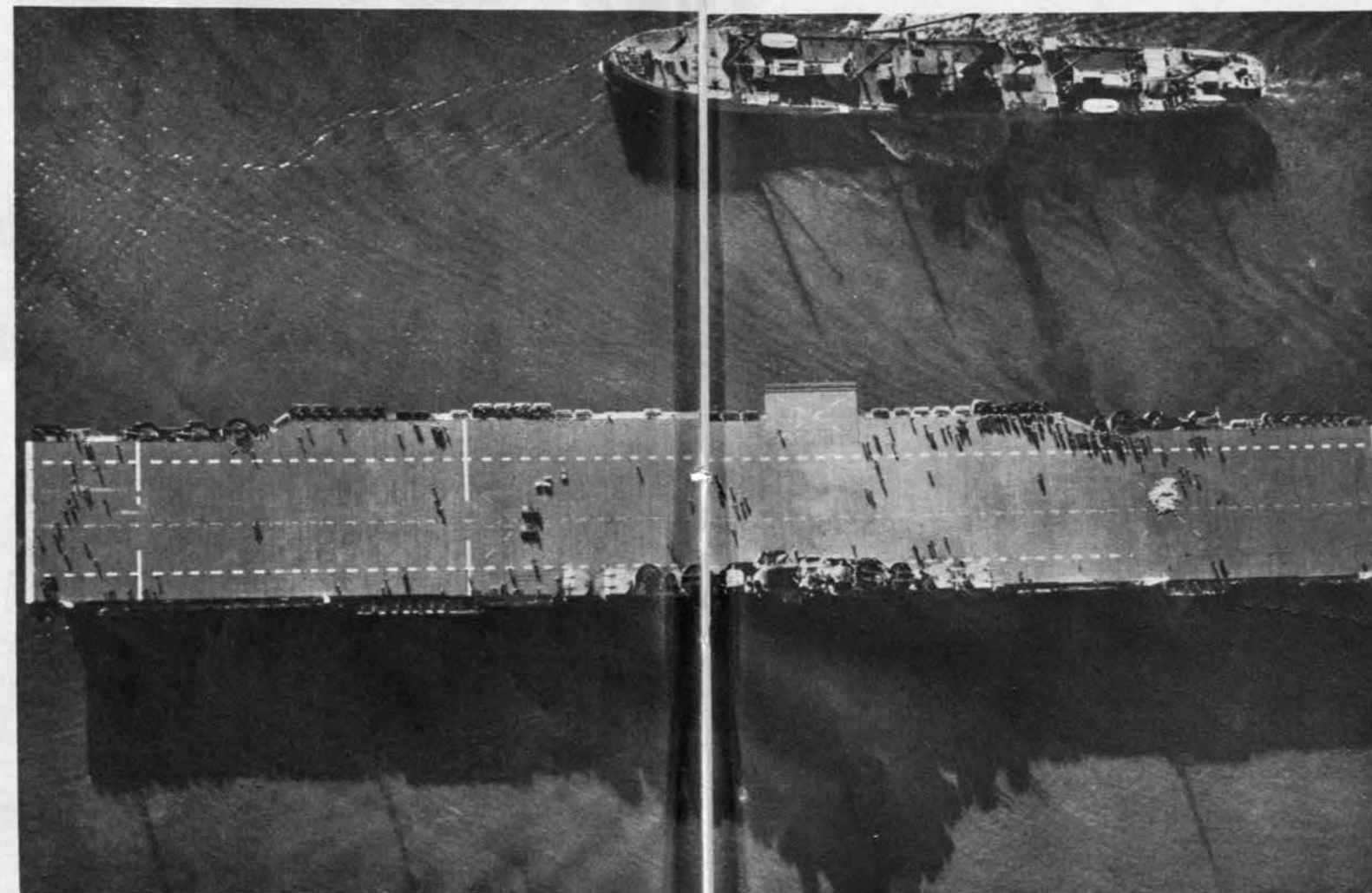
Old battleship has huge beam, deeply curved bow and stern. Pointed stem and sternpost are carried over partly from days of ramming.



Destroyer is somewhat more flat-sided than cruiser, has "weight" placed farther forward. Depth-charge racks square off stern outline.



Merchant ship is designed for cargo capacity. Notice lack of taper, blunt bow and stern, constant beam throughout amidships section.



Carrier hull shape is dominated by basic rectangle of the flight deck in contrast to the curved outline of other ships (note merchant vessel

above). Forward taper, sponsons and indentations may cause minor distortion of rectangle. CVE's are similar but have shorter flight deck.



Submarine has narrowest plan of all, being built for undersea operation. Deck is slim and pointed; while hull appears to bulge abaft conning tower.

QUIZ NO. 2: ALLIED ARMIES' SP GUNS





JAP LINE-UP AT U.S. BASE INCLUDES NICK, TONY, DINAH, BETTY, TOJO, OSCAR, FRANK, GEORGE, ZEKE, JILL AND NEW IRVING (LOWER LEFT)

JAPAN'S PLANES

FAST NEW FIGHTERS BOLSTER SAGGING AIR DEFENSE

The German phase of a global air war is finished. Thousands of Allied airmen who have been battling the Luftwaffe will shortly be on their way to the Pacific. To help them become oriented to their new enemy as well as to provide the latest coverage for fliers already fighting Japs, the *Journal* this month presents another review of Japanese military aviation.

Like the Luftwaffe in its last years, the Japanese air forces are girding themselves for a bitter defensive stand. It is true that a few new bombers are being developed, but the emphasis is on faster, more heavily armed and better protected fighter planes. The newest of these known to be in action, Frank, George and Jack, have gone far towards wiping out the speed advantage enjoyed by U.S. Army and Navy fighters. All three carry heavy armament, while two of them—George and Frank—are an attempt to match U.S. standards in armor and fuel-tank protection.

Although George, Frank and Jack are appearing in ever greater numbers, Zeke, Tony and Oscar are quantitatively still the

most important Japanese fighters. This does not mean that the Japs are satisfied with these planes; rather it suggests that before committing strained production facilities to any one or two types, they are expecting to perfect planes superior to those now in action. But regardless of what ultimately replaces today's Zekes, Tonys and Oscars, these planes remain important elements in Jap fighter defense.

U.S. gunners and fliers, however, will not only encounter these older types; they will meet Franks, Georges and Jacks in greater numbers. It is almost certain they will see Grace and probably Sam, carrier-based successor to Zeke. Other possibilities include navy twin-engine fighters Luke and Tenrai, single-engine Jimpu and Denko and the army's twin inline-engine fighter Ki 88. This means that U.S. airmen in the Pacific must be on the alert for the unknown. They must make recognition pitch in with other intelligence sources (see page 3) in giving the Allies a good working knowledge of enemy air strength.

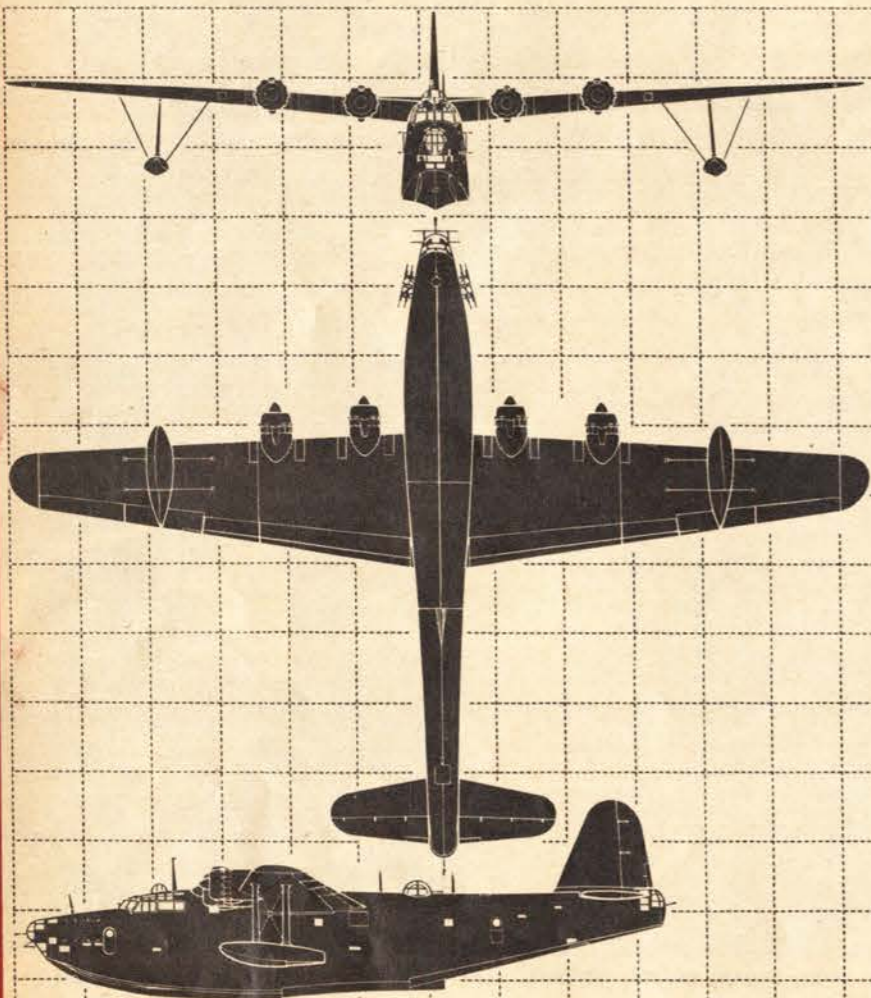
JAPANESE AIRCRAFT

PRINCIPAL ARMY & NAVY TYPES

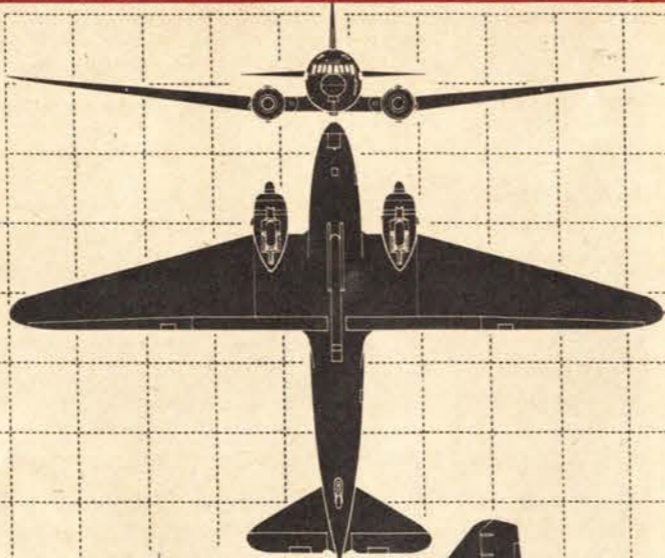
RESTRICTED

On this grid are the 27 fighters, bombers, reconnaissance planes and transports now considered the backbone of Japan's air power. Omission of some familiar types—Sally, Kate, Val and Pete—indicates their decreasing importance, does not imply that they are completely non-operational.

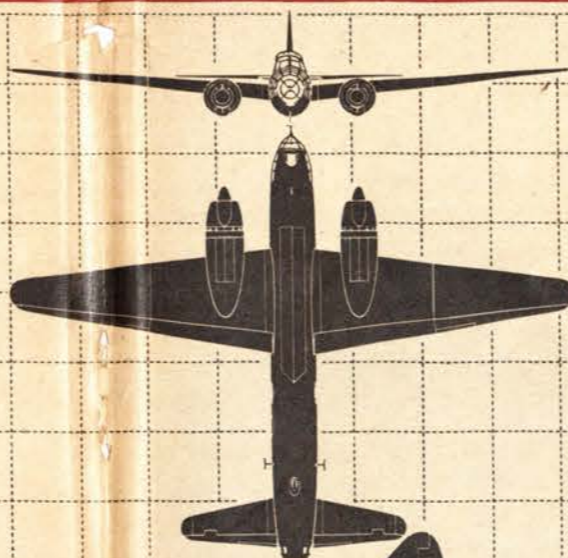
SCALE: EACH SQUARE EQUALS 10 FT.



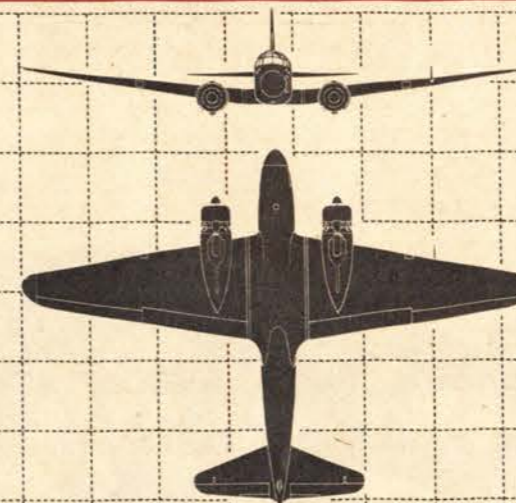
EMILY



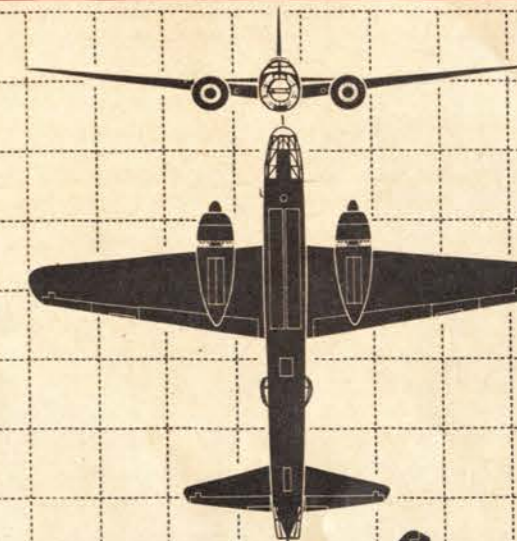
TABBY



BETTY



TOPSY



PEGGY



HELEN



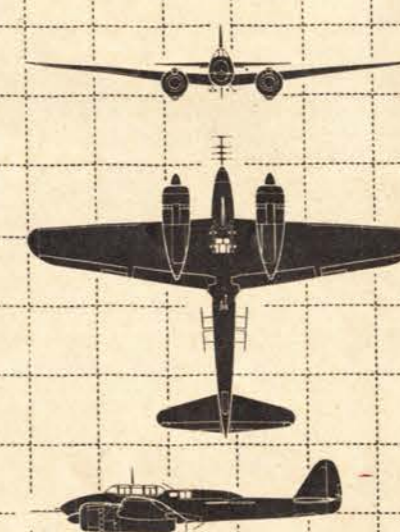
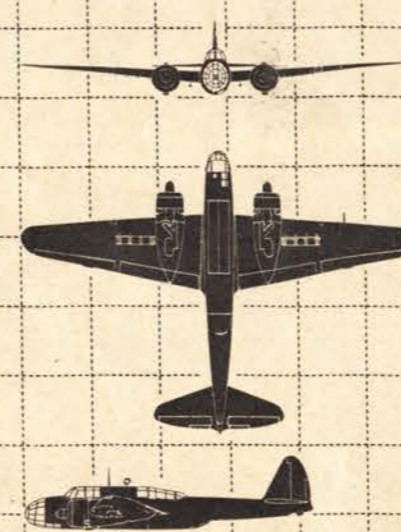
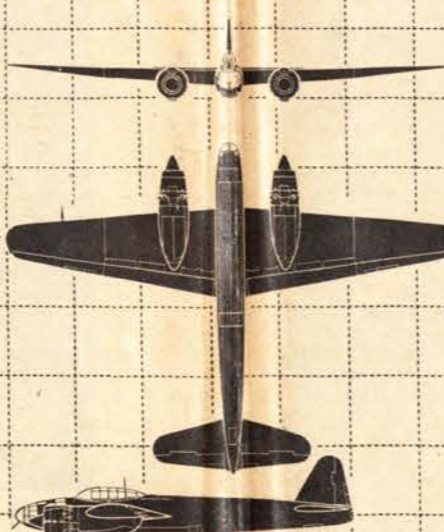
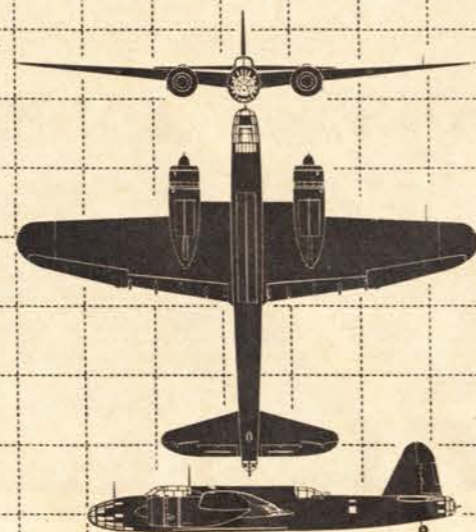
FRANCES



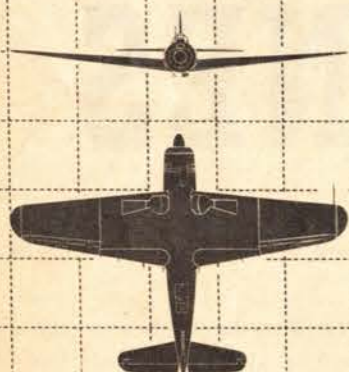
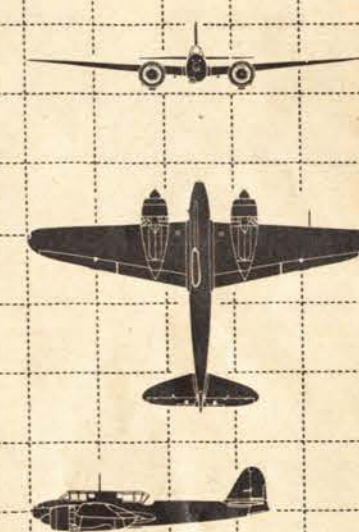
LILY



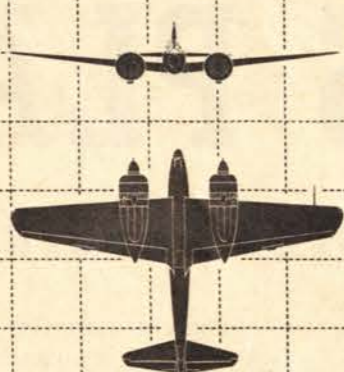
NICK



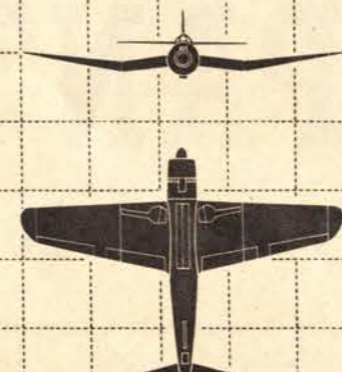
IRVING



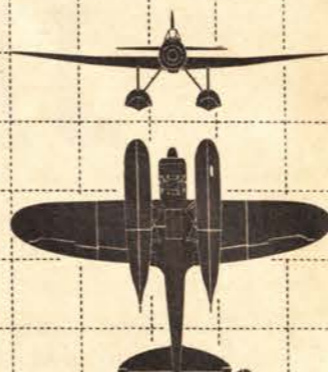
JILL



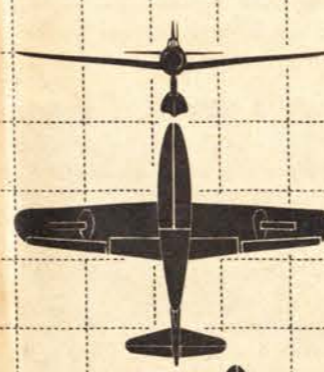
DINAH



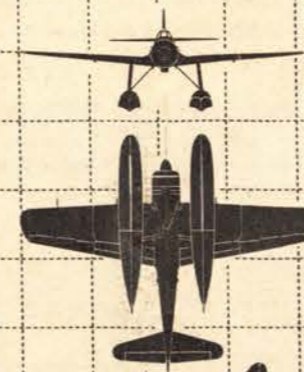
GRACE



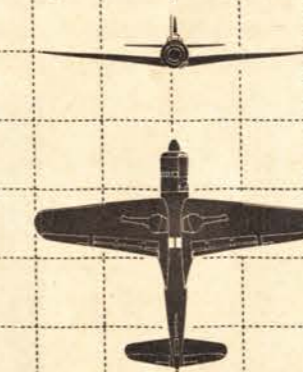
JAKE



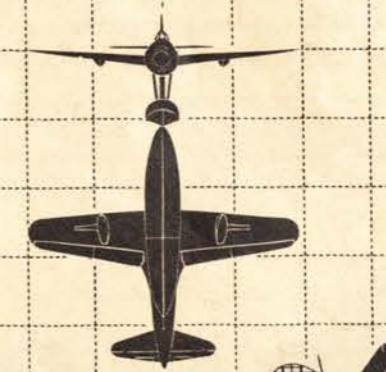
NORM



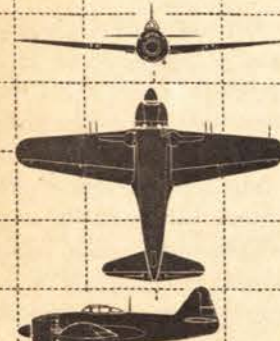
PAUL



MYRT



REX



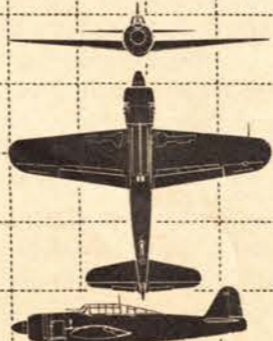
GEORGE



TONY



JULY 11



JULY 33



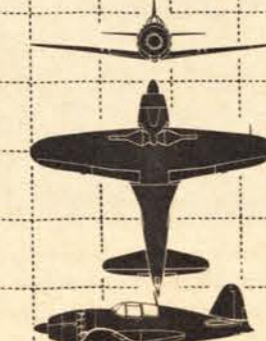
FRANK



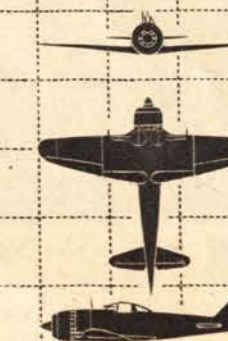
ZEKE



OSCAR



JACK



TOJO

THESE WARPLANES ARE AMONG JAPAN'S NEWEST



GEORGE Newest and best protected of Japs' single-engine fighters, George has a top speed of over 400 m.p.h. Thick fuselage and mid-wing set it off from other Japanese fighters.

Leading and trailing edges of George's wing have almost equal taper, moderate dihedral stems from the roots. Four 20-mm. cannon in the wing and two 7.7-mm. MG's in the nose comprise George's armament.



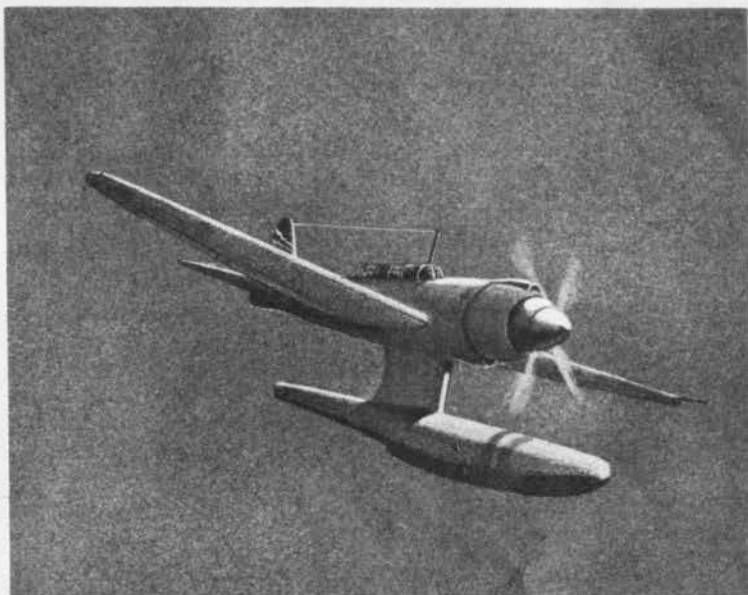
FRANK Army fighter has a 426-m.p.h. speed, two 20-mm. cannon and two 12.7-mm. MG's. Blunt-tipped wing tapers only on trailing edge; tailplane sits forward of fin and rudder.



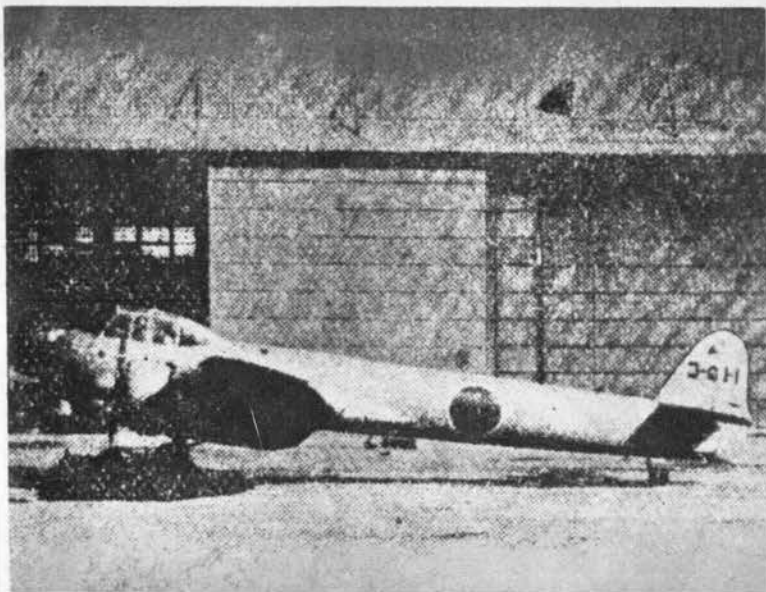
JACK Overall roundness marks barrel-shaped navy fighter. Tail is rounded and tailplane is set well forward of rudder. A later model has bubble canopy in place of faired cockpit shown here.



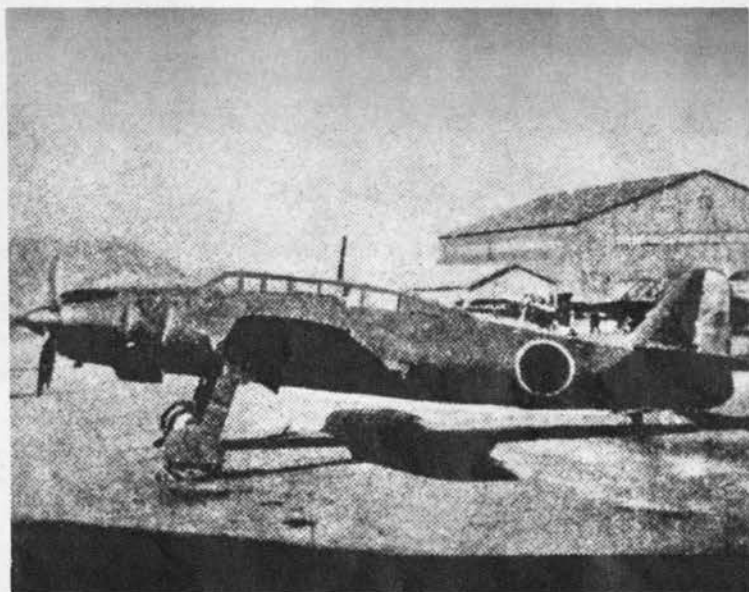
REX The seaplane fighter from which George (*opposite*) was adapted, Rex is probably replacing Rufe. Except for single float, larger spinner and more pointed tail, Rex closely resembles George.



NORM Designed for reconnaissance, Norm is bigger, slower than fighter, Rex (*left*). Nose is very long, has prominent intakes above and below cowl. Rudder projects below tail cone.



LORNA Extremely slow, this new bomber-patrol plane is used mainly as an antisubmarine weapon. Short nose, bulging greenhouse, small fin and rudder contrast with drawn-out fuselage.



GRACE Inverted gull wing and a long nose mark Japan's new carrier-based torpedo bomber. The long greenhouse and conventional triangular fin and rudder distinguish it from F4U.



PEGGY Army bomber carries either torpedoes or bombs, may even take part in Kamikaze suicide attacks. Top speed is nearly 350 m.p.h. Recognitionally Peggy is a cross between Helen

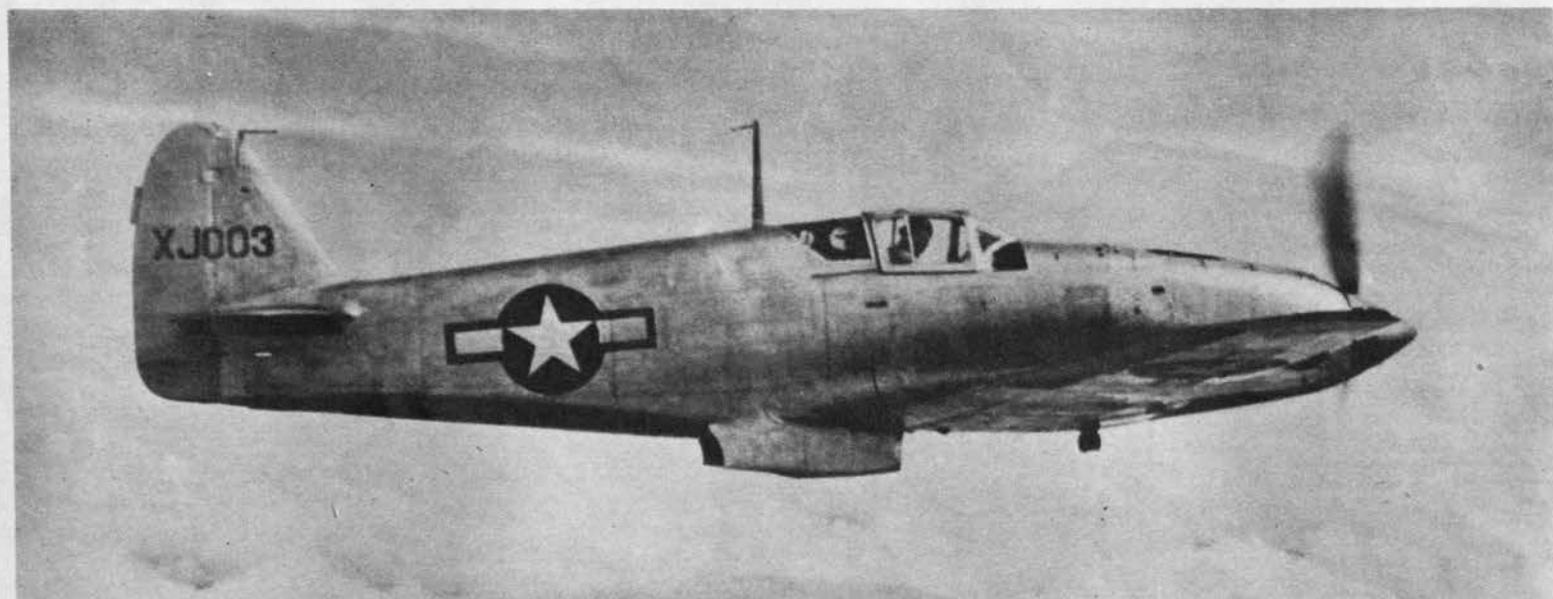
and Betty (*see pp. 34-35*). Standard bomber version (*above*) has plexiglass nose and tail, prominent side blisters and dorsal turret. A recon version with plywood nose and tail and no blisters is in operation.

SOME JAP VETERANS THAT ARE STILL FIRST-LINE



ZEKE Exemplifying Jap fighter design, Zeke has a round nose, low unbroken wing, blister canopy, slim fuselage, and tailplane set well ahead of the tail point. Zeke 52, with its rounded wing-

tips and 36-ft. span, has completely replaced Zeke 21. Fighting from both carriers and land bases, Zeke is extremely maneuverable, but 354-m.p.h. top speed is well below that of the newest Japs.



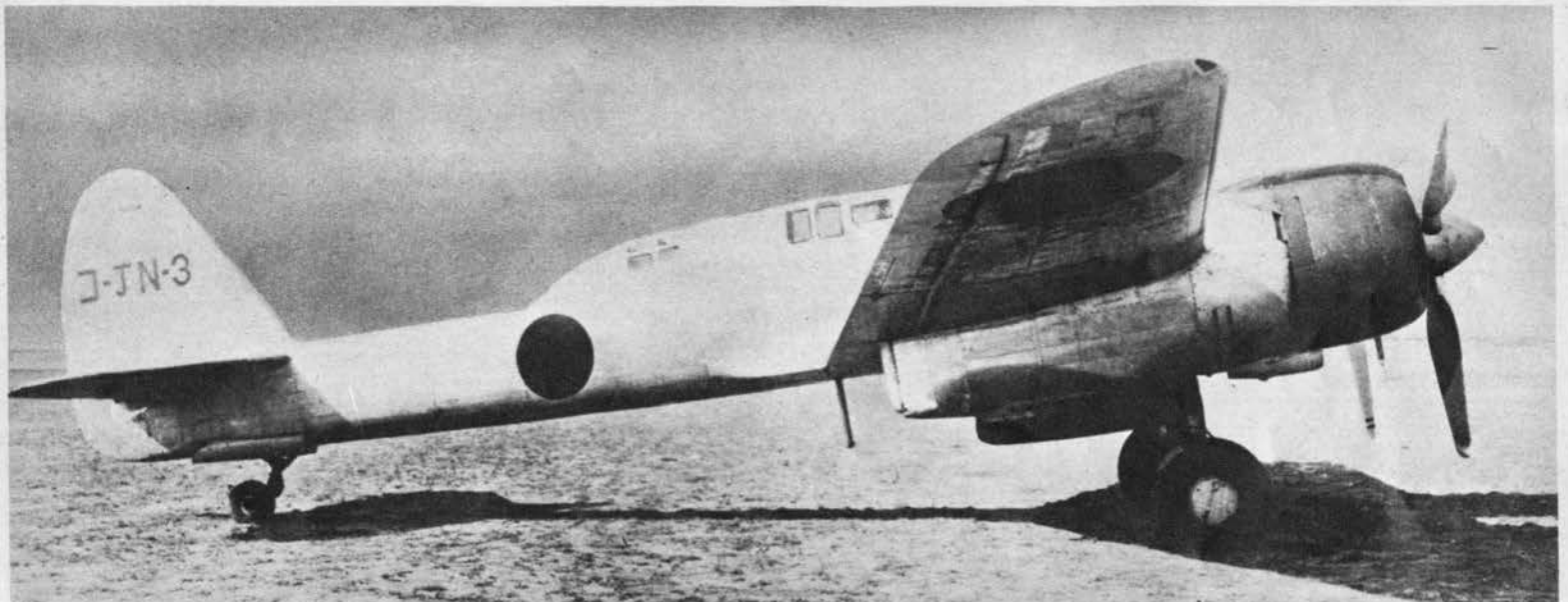
TONY Based on German designs, Tony's faired cockpit and long nose housing an inline engine make it unique among Jap fighters. Fuselage looks heavy and humped, has a belly aircoop set

behind wing. The narrow rudder has a straight trailing edge but is curved at top. Top speed is about 360 m.p.h.; armament consists of four 12.7-mm. MG's or two 20-mm. cannon and two 12.7-mm. MG's.



NICK Chief nightfighter for the Japanese army, Nick may be seen with a forward-firing 37-mm. cannon in the nose or slung under the fuselage. Greenhouse rises abruptly behind the pointed

nose and curves down aft of wing's trailing edge. Wing is low mid with dihedral from the roots, tapers somewhat more on the trailing than on the leading edge. Top speed is 346 m.p.h. at 21,100 ft.

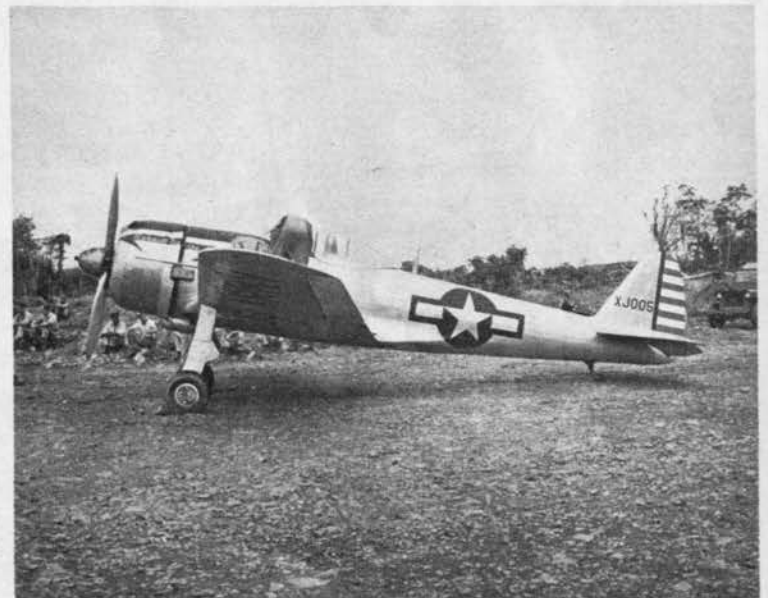


IRVING Nick's naval counterpart, Irving is primarily a night-fighter but also a recon plane and suicide bomber. Two-step greenhouse extends halfway from wing to fin with raised sec-

tion over the wing. Wing has sharp dihedral from roots, supports underslung nacelles which appear clipped at the rear. Fin and rudder have raked leading edge, while top and trailing edges are curved.



TOJO Tojo's most distinguishing features are its heavy nose and wing's curved trailing edge which indicates possible Seversky ancestry. Note great distance between rudder and tailplane.



OSCAR Long fuselage looks stretched when compared to the short nose. Wing's trailing edge tapers sharply, leading edge is straight. Although slow, Oscar is highly maneuverable.



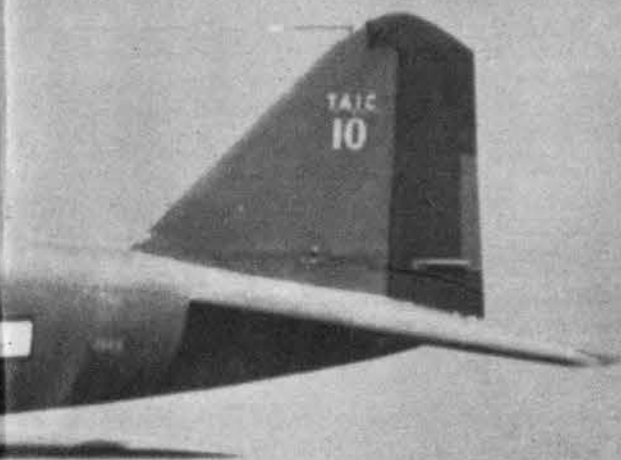
DINAH Importance of good reconnaissance to the Japanese is shown by specialized planes like Dinah (*above*) and Myrt (*below*), both designed and used for reconnaissance. Dinah is the

Japs' smallest twin-engine warplane and so far the fastest, with a maximum speed near 400 m.p.h. Usually unarmed, Dinah should not be confused with the heavily armed fighters, Nick and Irving (*preceding page*).



MYRT Carrier-based, Myrt is nearly as fast as Dinah (*above*), has a range of 2,500 miles. It can be recognized by the long greenhouse, exceptionally long nose and the forward lean of fin

and rudder. The wing has moderate dihedral and even taper on the leading and trailing edges. The belly has a window for a fixed, vertically mounted camera. Myrt is capable of carrying a single 1,760-lb. torpedo.



Angular rudder, broad slanting fin and faired greenhouse are distinctive on Dinah. Seen head-on, it has a lower wing than Nick, less underslung nacelles than Irving. Note modified nose on Dinah 3 on grid.



JUDY 11, 12 This divebomber is still operational in its inline version (*above*), although more and more radial Judys (*right*) are appearing. Both are dangerous suicide planes.



SONIA Though obsolescent, Sonia is still operational, particularly against Chinese ground forces. Landing gear, wing dihedral on outboard panels only are important recognition aids.

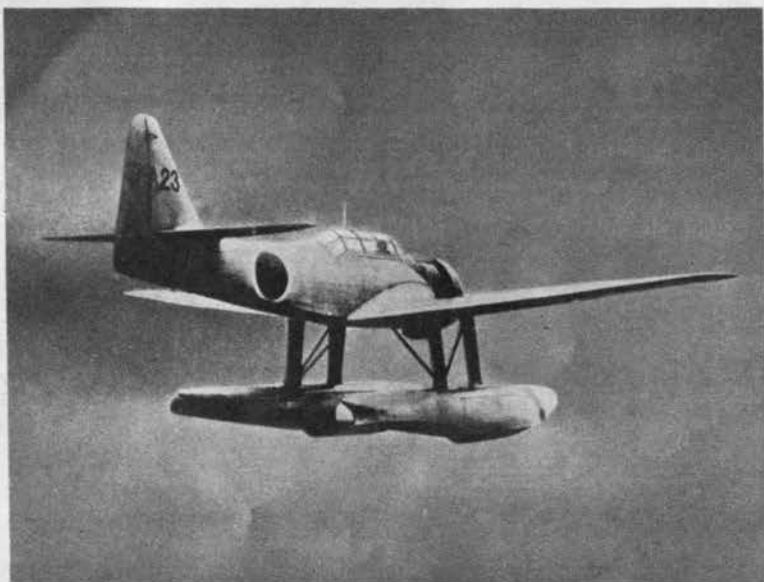


JILL Chief Japanese carrier-borne torpedo plane, Jill has largely replaced Kate. Wing has unbroken dihedral from the roots and flap guides on trailing edge. Tail assembly resembles Myrt's.

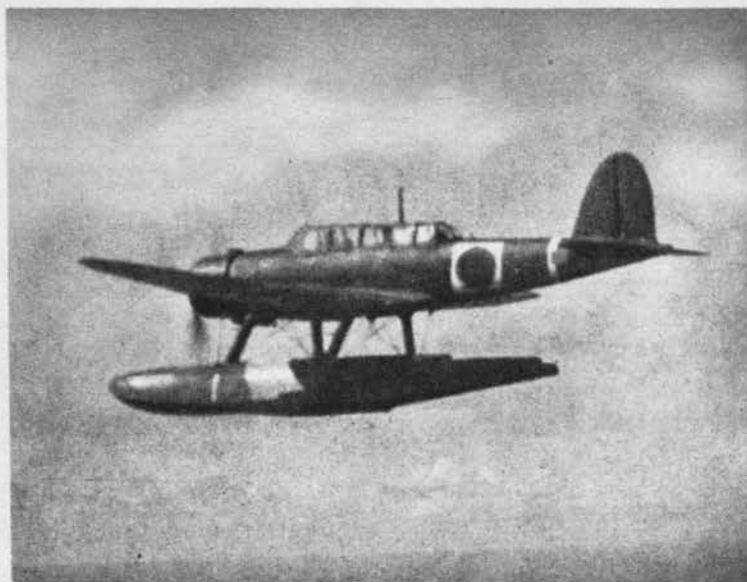


JUDY 33 Except for the nose and airscoop, both Judys are identical. Wing is low mid with slight dihedral. The greenhouse is long and low with a gradual slope down to the rear.

IMPORTANT JAPANESE SEAPLANES AND HEAVIER BOMBERS



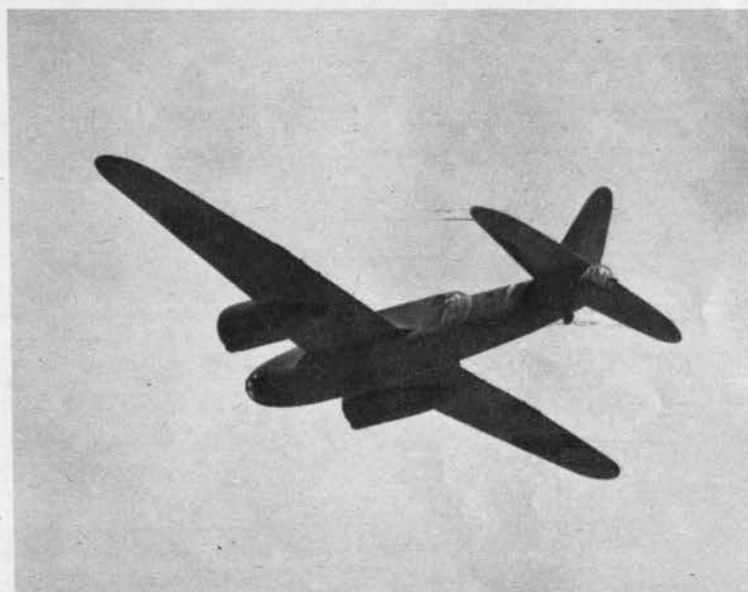
PAUL A divebomber and recco plane, Paul has typical Japanese twin floats but unusually angular wing and tail surfaces. The wing's trailing edge has pronounced taper; tips are blunt, raked aft.



JAKE Now obsolescent but still used for recco, Jake is older and slower than Paul (*left*) but like it has twin floats. Jake has a longer greenhouse; wing is elliptical and fin and rudder rounded.



EMILY One of the Japs' most successful designs, Emily makes 245 m. p. h. at sea level, has 4,190-mile range. The nose is long and pointed. The single fin and rudder sit forward of tail gun.



HELEN Although giving way to Peggy, Helen is still the Jap army's most widely used bomber. Wing has a curved trailing edge, leading edge broken by an extension between nacelles.



LILY Although still classified as a light bomber, Lily is likely to become more important as a divebomber. This is indicated by dive brakes found in the latest version. Lily's bulging belly

should make it easy to recognize in the beam view. The nose is oval when seen head-on; greenhouse is long and fairly high. The wing tapers slightly on the leading edge, more sharply on the trailing edge.



FRANCES Sweeping over U. S. carrier, flaming Frances may have tried to crash the deck. A high-level bomber and torpedo plane, Frances is fast enough (355 m. p. h.) for night-

fighting. The nose is short and pointed; fuselage long and slim; the fin and rudder are triangular. There is no tail gun position but 20-mm. cannon are mounted in the nose and in a dorsal gun position.

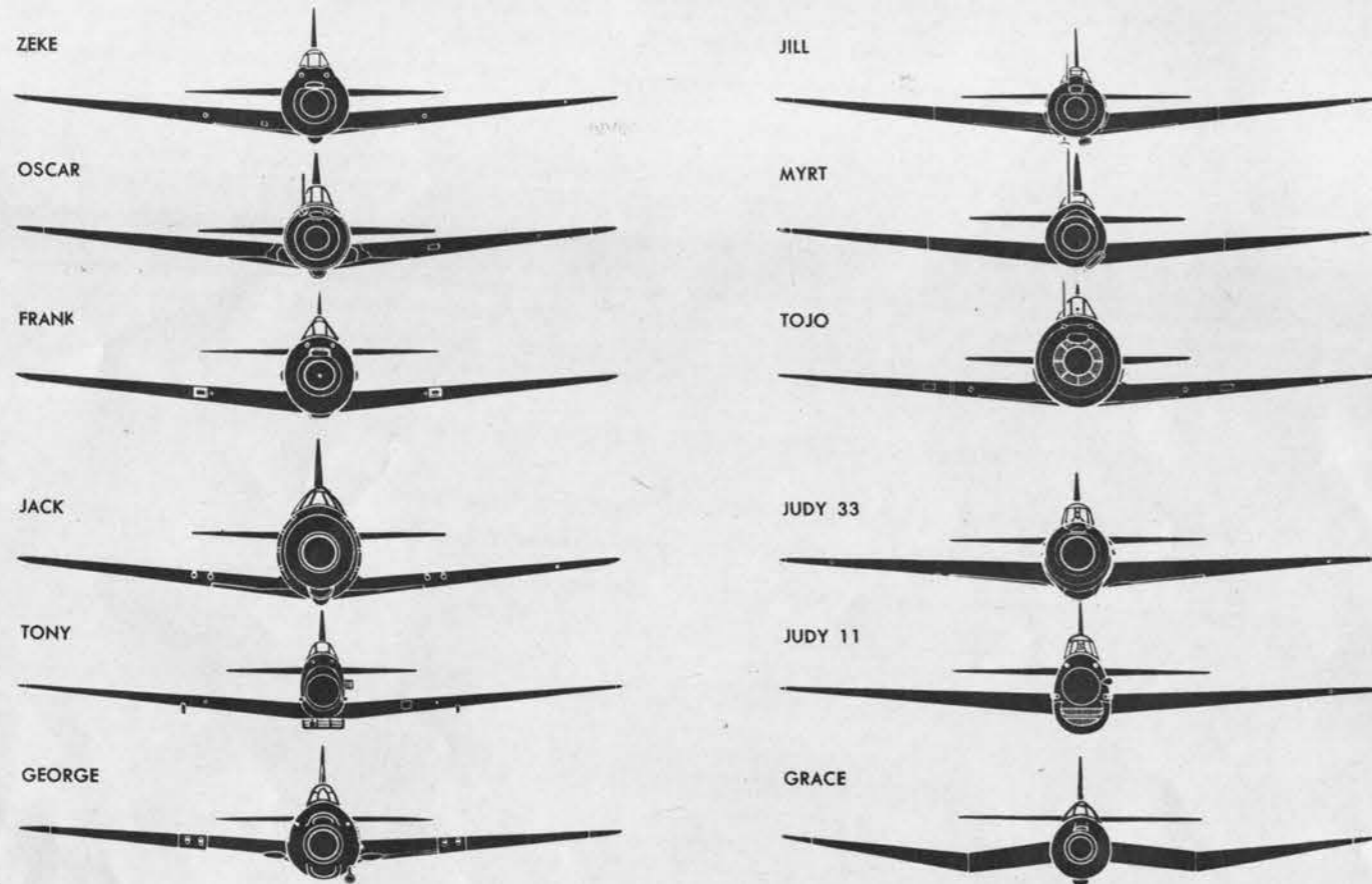


BETTY General fatness, evident on all Bettys, is even more pronounced on one of latest versions, Betty 24, with its bulging belly line. Unlike early models of Betty, now relegated to trans-

port duty, the current bomber versions have round wingtips and a rounded tip on fin and rudder. A real workhorse, Betty carries either bombs or torpedoes and has frequently been used for reconnaissance.

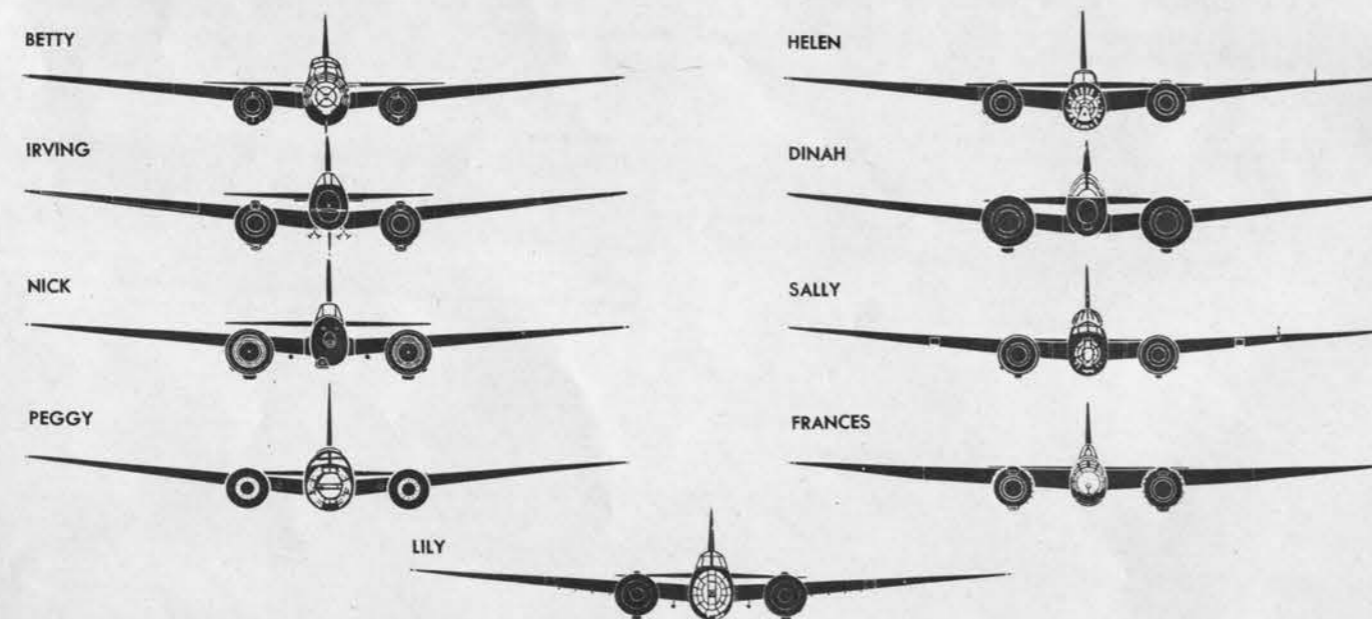
SINGLE ENGINE JAP

WHEN SEEN HEAD-ON, JAPANESE SINGLE-ENGINE AIRCRAFT GENERALLY APPEAR TO HAVE ROUND NOSES. WING IS ALMOST ALWAYS SET LOW, WITH EVEN DIHEDRAL FROM THE ROOTS (i.e., NO BREAK IN THE WING)



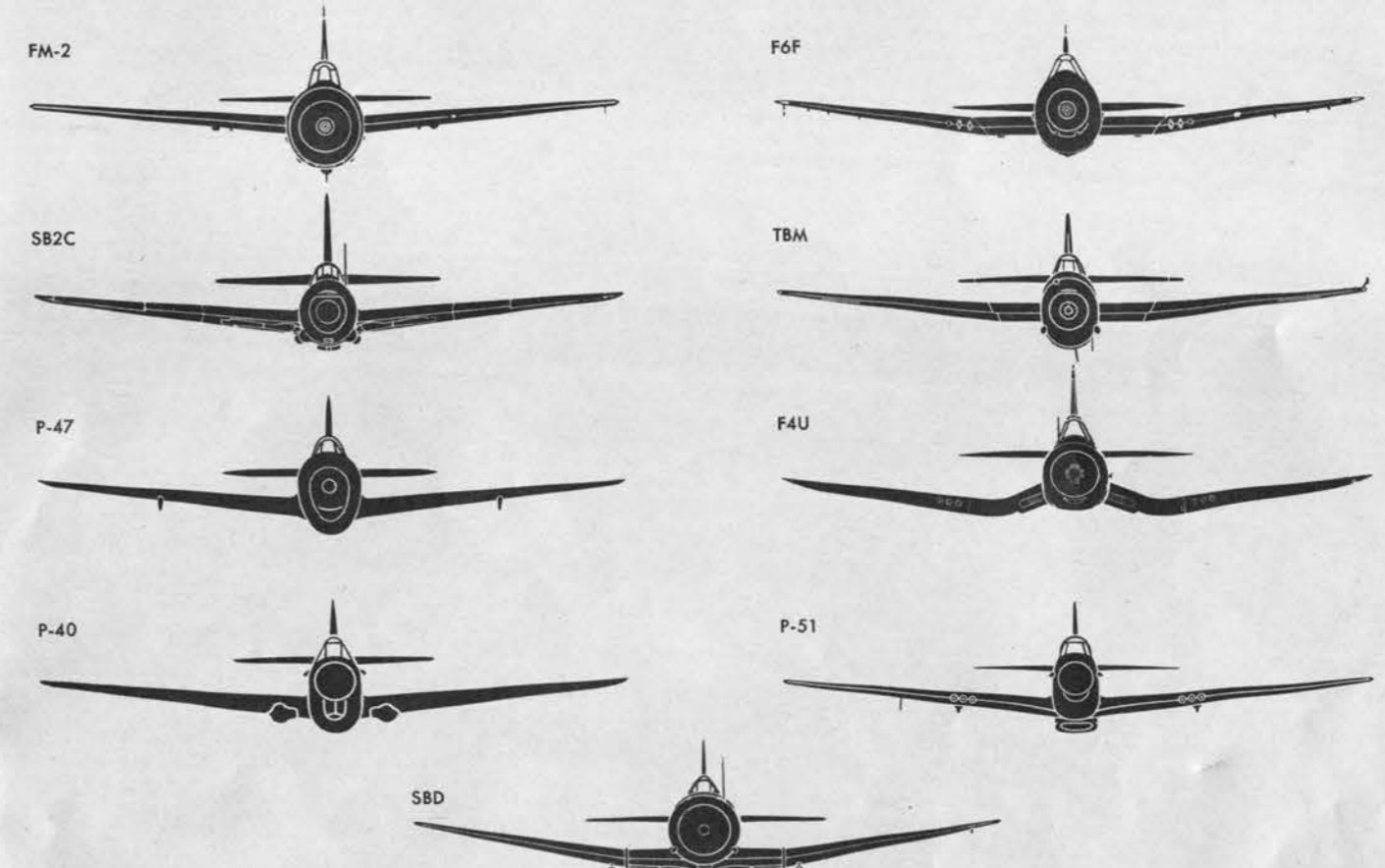
TWIN ENGINE JAP

SINGLE FIN AND RUDDER SET ABOVE A LOW, FLAT TAILPLANE ARE CHARACTERISTIC OF ALL JAPANESE TWIN-ENGINE AIRCRAFT SEEN IN HEAD-ON VIEW. THE WING POSITION USUALLY RANGES BETWEEN MID AND LOW



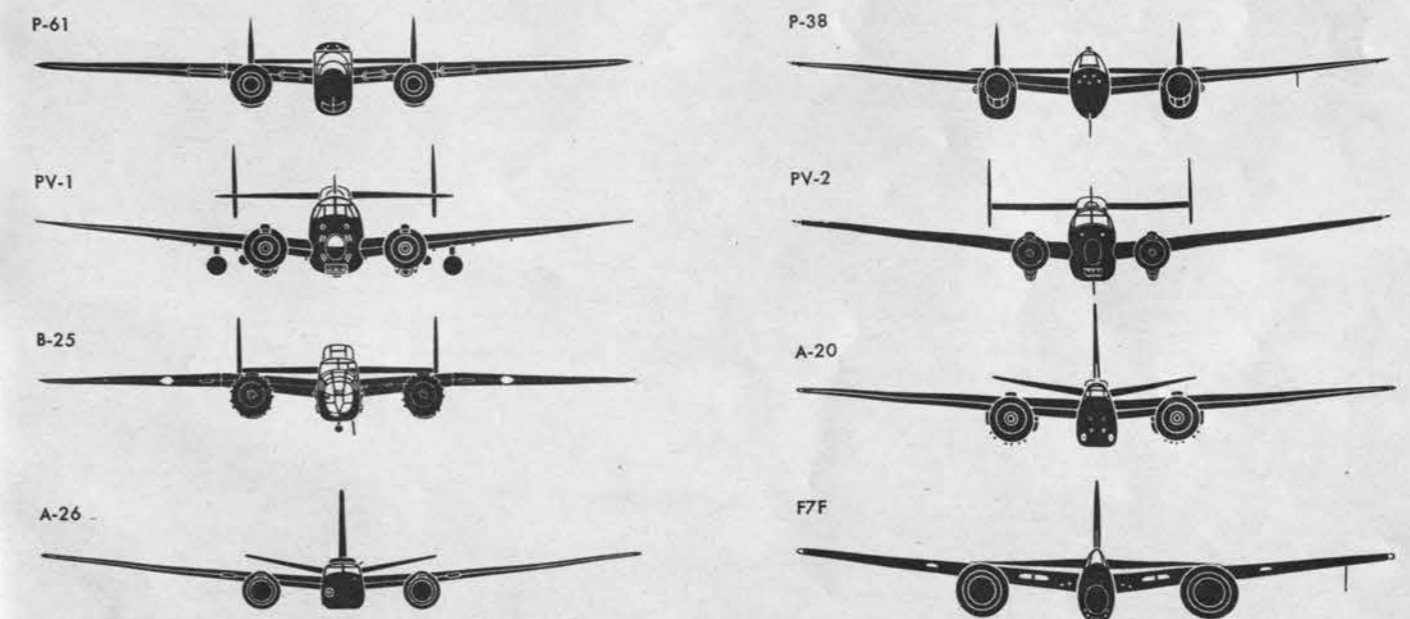
SINGLE ENGINE U. S.

IN CONTRAST TO THEIR JAPANESE COUNTERPARTS, MOST U. S. SINGLE-ENGINE PLANES ARE MORE MID-WING THAN LOW. A PROMINENT WING BREAK IS ALSO CHARACTERISTIC OF MOST U. S. CARRIER-BASED TYPES



TWIN ENGINE U. S.

EITHER TWIN FINS AND RUDDERS OR A DIHEDRAL TAILPLANE ARE CHARACTERISTIC OF ALL U. S. TWIN-ENGINE BOMBERS AND FIGHTERS EXCEPT THE NEW F7F TIGERCAT. HIGH (SHOULDER) OR MID-WING PREDOMINATES



JAP VS. U.S.

RESTRICTED

NATIONAL CHARACTERISTICS ARE NOT A NEW SYSTEM OF RECOGNITION TRAINING BUT ARE A SUPPLEMENTAL AID TO UNDERSTANDING ENEMY AND OUR AIRCRAFT. THIS

CHART POINTS OUT GENERAL DIFFERENCES IN U. S. AND JAPANESE COMBAT AIRCRAFT SEEN HEAD-ON. IT WILL BE FOLLOWED IN LATER ISSUES BY DIAGRAMS ILLUSTRATING

CONTRASTS IN BEAM AND PLAN VIEWS. THE CHARTS ARE A DETAILED FOLLOW-UP TO THE OUTLINE OF NATIONAL DESIGN STYLES THAT APPEARED IN THE MARCH JOURNAL.

RESTRICTED

ALLIED AND JAP RUNNING GEAR

Distinctive types help ground forces spot tanks

Since the general outlines of a tank may easily be obscured by camouflage and since suspensions are almost impossible to disguise, it is important to know the types of running gear. The airman may find little value in this form of recognition, but it is of value to the ground-force soldier who must deal with tanks at close range.

Tank suspensions fall generally into national patterns. U. S. vehicles, formerly characterized by the tandem-mounted bogie wheels of the M-4 and M-5 chassis, are now shifting to a torsion-bar suspension (*below*) and to the horizontal volute type described in last month's *Journal*.

Russian tanks have two important suspension systems. The KV type, found also on the Stalin, has six almost evenly spaced bogies with three large return rollers. The Christie type suspension, found on the medium tank T-34, has five large bogies which fill the space between the tracks. There is also a small idler wheel at the front of the tank. Like the U.S. M-26, all Russian heavy and medium suspension systems have rear driving sprockets which are especially conspicuous on the KV series. British Cromwells and Challengers have Christie suspensions also and have, as does the Churchill with its unique running gear, rear driving sprockets.

The suspension system the Japanese use on medium tanks looks much like that found on German PzKpfw III and has two prominent return rollers with a very small one between. The Japs' usual spring casing is also in evidence. The other Japanese suspension is found on the light and amphibious vehicles and has four bogie wheels coupled in pairs. The top track slopes up from rear to front.



MIGHTY STALIN TANK HAS KV TYPE SUSPENSION. IT HAS SIX ALMOST EVENLY SPACED BOGIES WITH THREE LARGE RETURN ROLLERS ON EACH SIDE AS ON ALL BIG RUSSIAN TANKS, THE DRIVING SPROCKET IS AT REAR



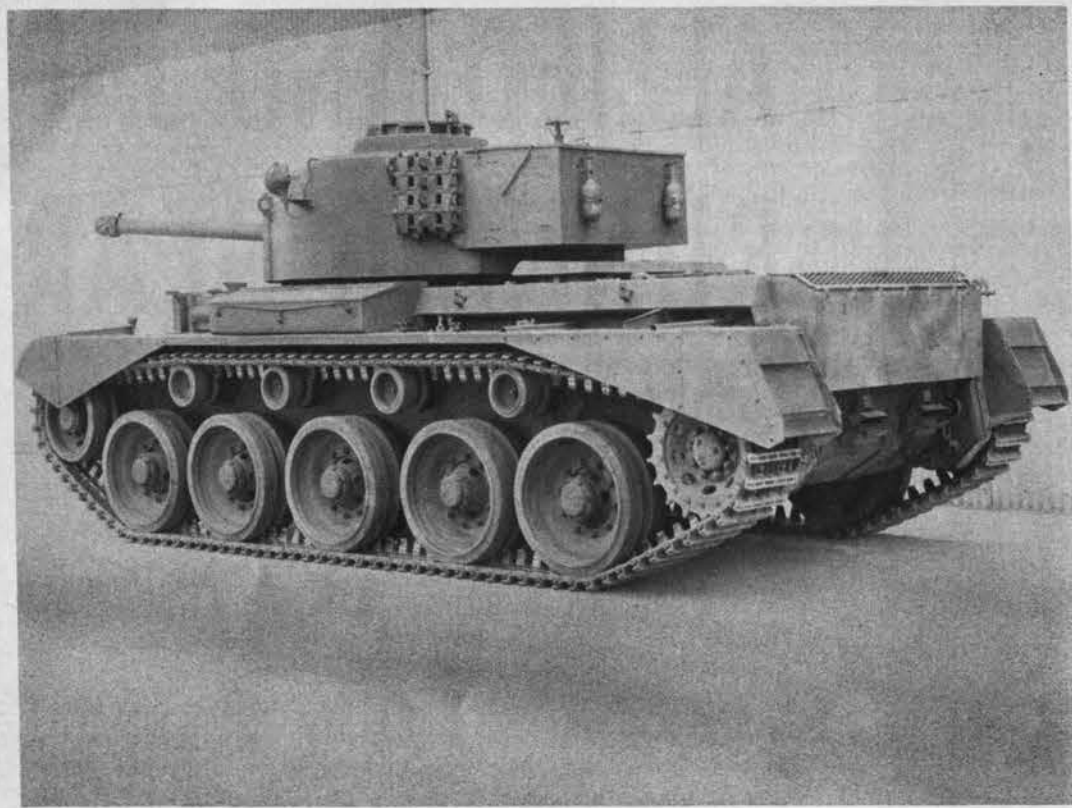
Newest and most powerful U.S. tank, the Pershing M-26 has widely used suspension called the torsion bar, often erroneously called Christie. Like the Stalin, it has its driving sprocket at the rear.



Soviet T-34 has the standard Christie suspension with rear drive, large evenly spaced bogies supporting the track. T-34 may be seen with ribbed bogies in place of the disks shown here.



M-18 tank destroyer was first U.S. vehicle with the torsion-bar running gear used in combat. Its front sprocket, five bogies, four return rollers are also used on SP guns built on the M-24 chassis.



Modified Christie suspension on Britain's new Comet has five bogie wheels, four return rollers. It looks like U.S. torsion-bar types (M-18, M-37) although the technical construction is different.



Big Churchill (right) is only operational tank with overall tracks and eleven small bogie wheels. Valentine (left) has two sets of bogie wheels.



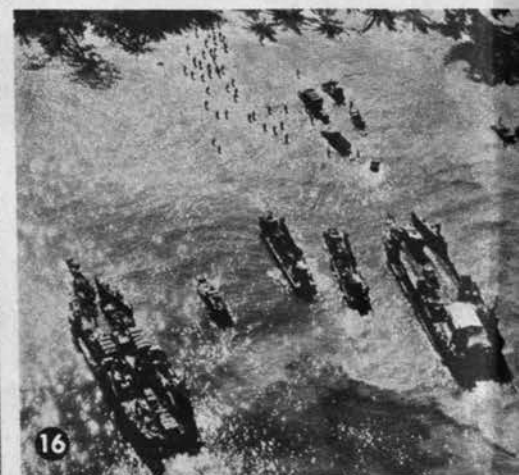
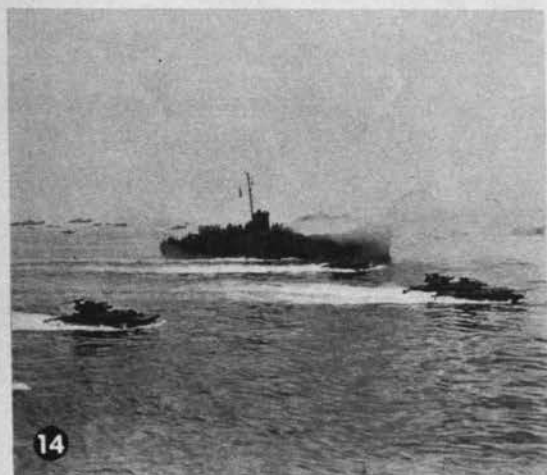
New M-4 suspension, the horizontal volute, is used on latest 155-mm. gun motor carriage, T-83. It has a broad track, prominent return rollers and horizontal springs between bogie wheels.

SIX BOGIE WHEELS ON JAP MEDIUM, MODEL 97, MAY SUGGEST NEWER U. S. VEHICLES, BUT ONLY TWO RETURN ROLLERS STAND OUT ON ENEMY



JAP AMPHIBIAN, CALLED MODEL 2, HAS A LARGE TRAILING IDLER, PAIRED BOGIE WHEELS WHICH ARE SUSPENDED FROM HEAVY INVERTED-V ARMS



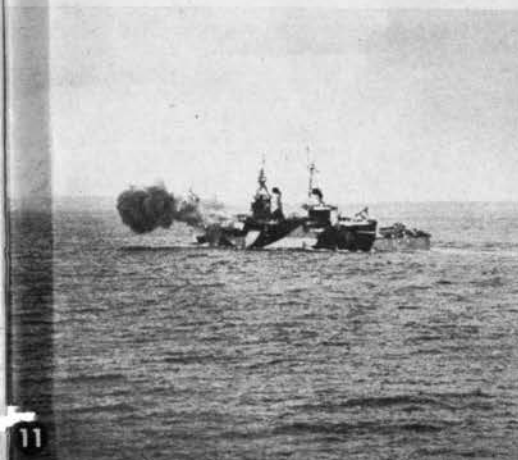
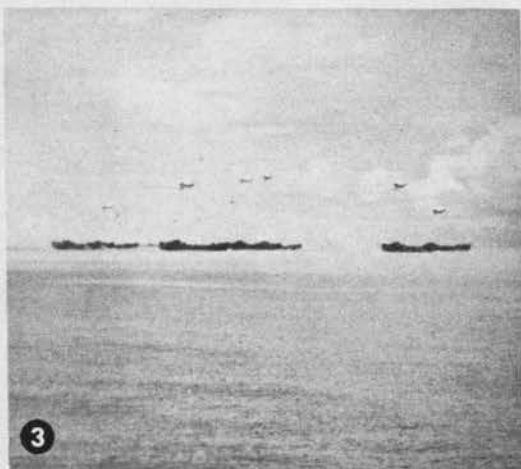
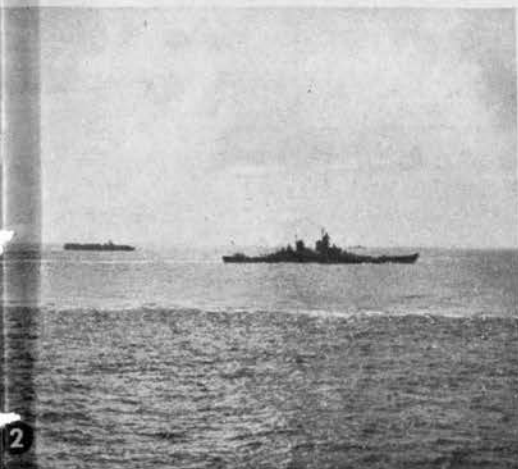


QUIZ NO. 3: U.S. LANDING OPERATION

Vast in scope, landing operations involve almost every type of land, sea and air equipment as well as the specialized landing craft. In this quiz are representative examples

of the ships, planes and armor that dominate each major phase of an over-water invasion. The fleet puts to sea, weathers enemy attack, and softens up the objective with planes and big

guns. Landing craft move in to beaches while the enemy attempts sneak reinforcement of his beleaguered position. Can you spot the varied weapons used in this complex, all-out campaign?



(For answers see p. 48)

JAPANESE DUMMIES

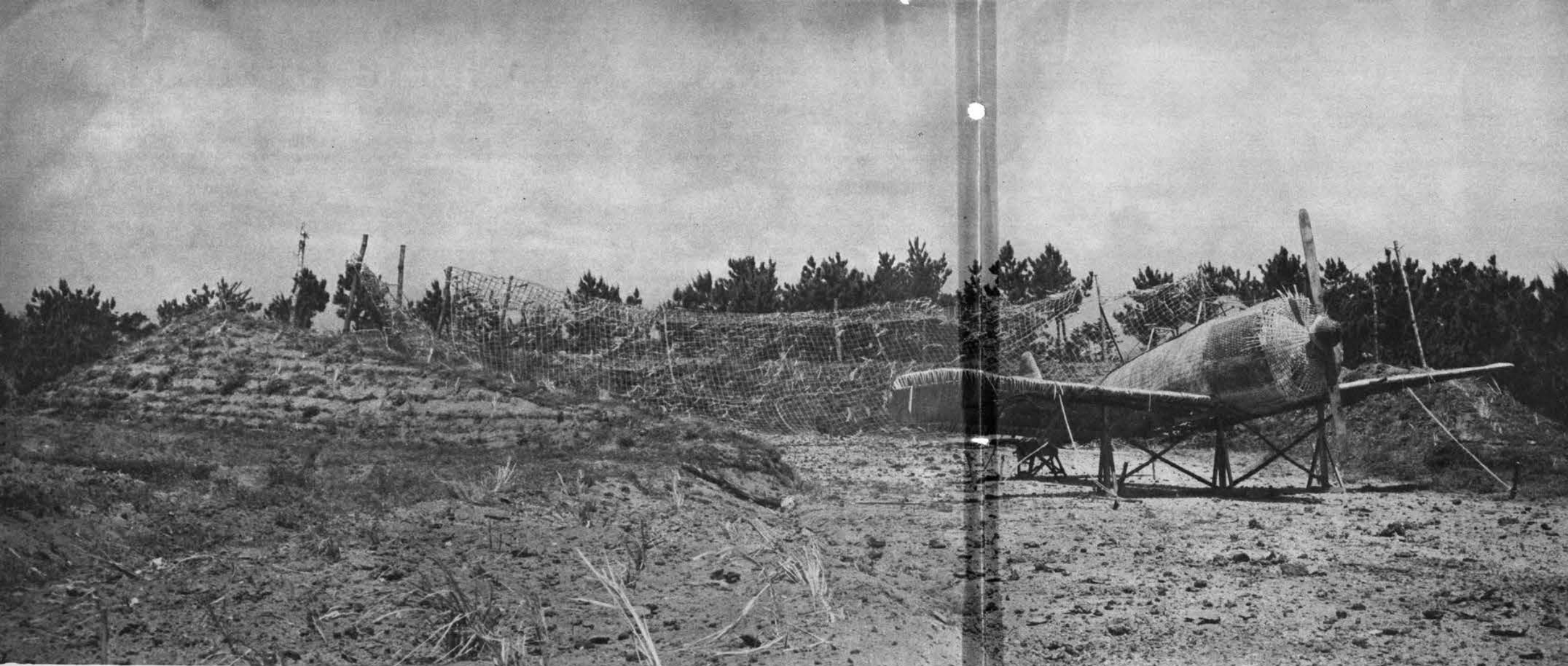
With their customary expertness at camouflage, the Japanese have made a fine art of the construction of dummy planes and the placing of all sorts of decoys on their airfields. The ever-increasing use of these techniques testifies to the fact that Allied bombs and bullets may be wasted and that Allied lives are being endangered by these cleverly planned booby traps.

First Jap dummy planes actually captured were found at Buna on New Guinea in December 1942. Compared with the carefully made dummies shown on these and the following pages, they were crude affairs, two coconut logs thrown together to simulate the shape of an airplane. Rough as these imitations were, they nevertheless proved effective, judging from the number of bomb craters surrounding them.

After these first attempts, the enemy went one step further, using prefabricated wooden sections to build their dummy aircraft. Of the dummies built in this manner, none looked exactly the same as any of the Japs' operational types. In some cases these were spotted as dummies; in others they gave rise to reports that new designs had reached Japanese airfields. By far the most realistic are the dummies recently found on Okinawa. Made of rattan woven around a bamboo framework, they are carefully modeled after Zeke.

Dummy planes are not the only artifice. Obsolescent planes and non-serviceable operational types are ostentatiously displayed to draw U. S. bombing and strafing. Even more intriguing, or so the Japanese seem to hope, are real or imitation U. S. planes prominently parked on an airstrip. Where no real American airframe is available, the Japanese may paint a silhouette on the field or make them out of gravel fill. Since these last two do not cast a shadow, they should be easier to recognize than well-made dummies.

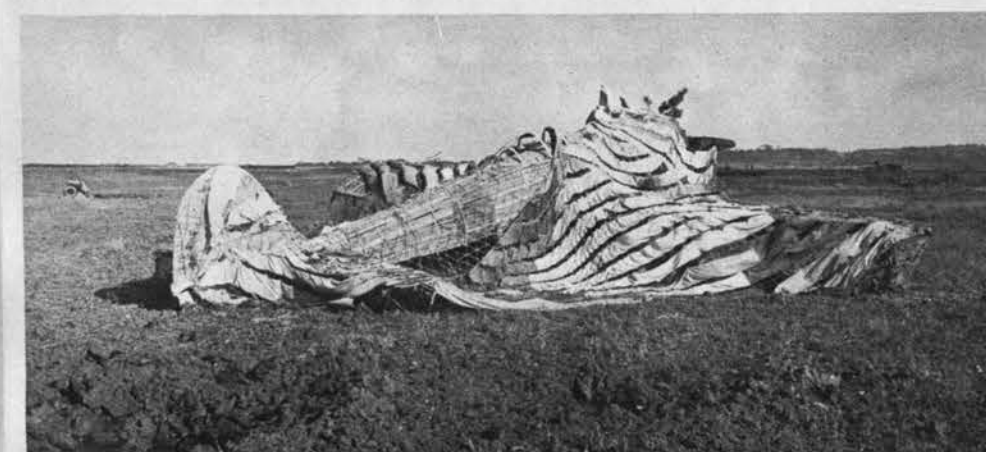
Not content with decoys, the Japanese have made dummy airstrips and dummy revetments. And surrounding a good many of the fake installations are heavy anti-aircraft concentrations, to trap unwary fliers who are attracted by the bait. Unfortunately there is no one giveaway which will prevent U. S. pilots from being taken in by the decoys. They must simply learn each Jap trick as it is revealed by captured airfields or photo reconnaissance and take a second look before swooping down on some particularly inviting target.



SHOWING CAREFUL WORKMANSHIP AND ATTENTION TO DETAIL, THIS DUMMY JAP FIGHTER IS COVERED WITH A CAMOUFLAGE NET TO HEIGHTEN THE ILLUSION. MADE OF RATTAN ON A BAMBOO FRAME, IT IS THE MOST REALISTIC YET PRODUCED



Zeke's tail has been reproduced with amazing accuracy in this rattan-bamboo dummy. Decoy in the background has a fairly convincing cockpit cover and both have the Japanese meatball painted on wing and fuselage. They are extremely difficult to spot from a distance.



Camouflage net and cloth give an added realism to this straw dummy which is not so well made as others. However, cloth and netting cover flagrant deviations from actual designs.



Useless Zeke 21, propped up by an oil drum, was photographed on Iwo Jima by a low-flying U. S. plane. It is an example of the Japanese use of such non-serviceable models as decoys.



Dummies at Ie Shima include a fairly realistic Val (*second from right*) along with some others which do not resemble anything in particular.



Additional dummies on the Ie Shima airfield can be spotted because of their freak wing shapes, failure to resemble known types of aircraft.



Outline drawings of three Liberator wings and one Fortress wing (*at upper right*) stand out in camouflage atop hangars in the Tokyo area.



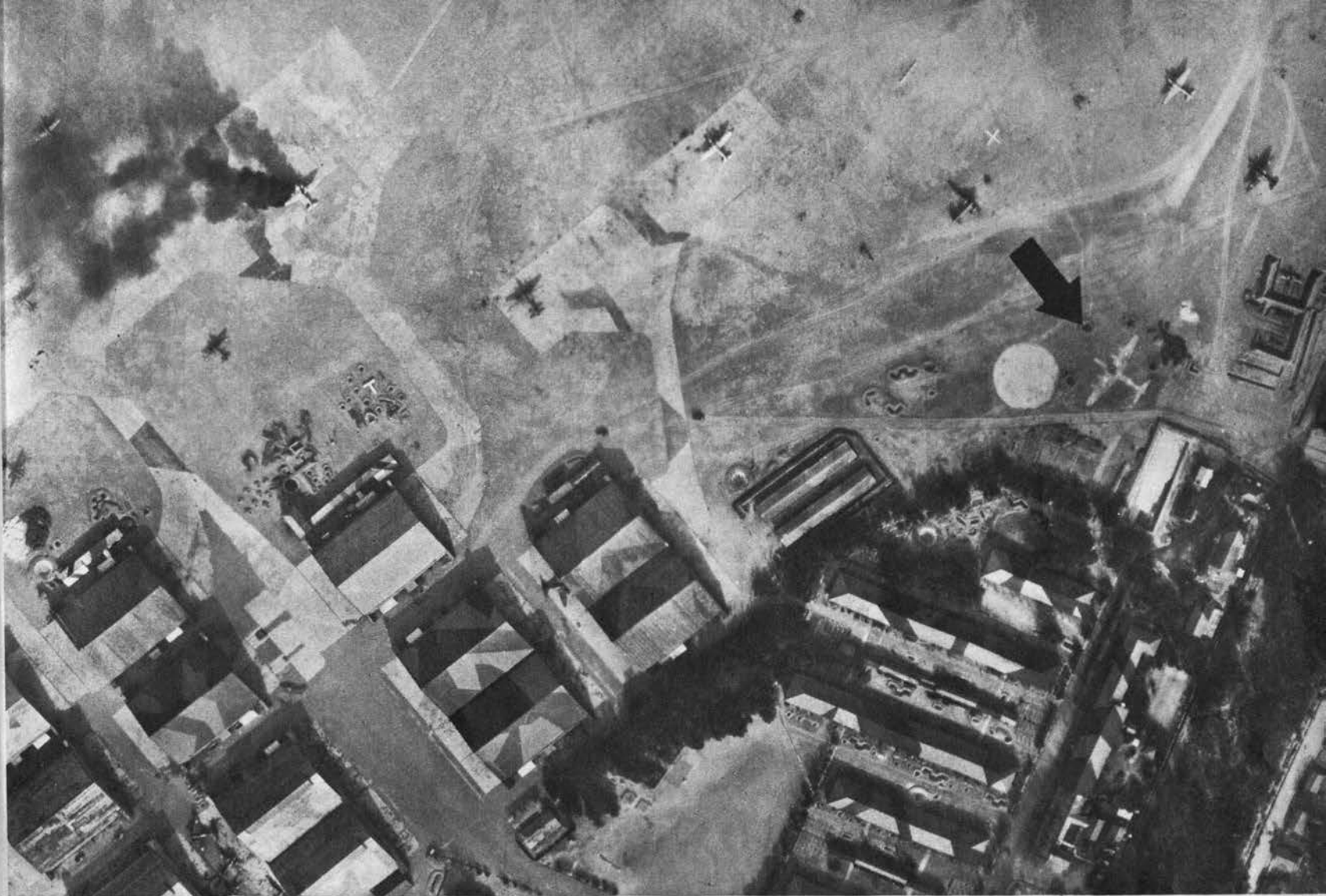
Nine single-engine dummy planes, a non-operational biplane and old cargo type are grouped to draw fire from legitimate targets near by.



Bomb bursts near a dummy or possibly damaged B-29 testify to its worth as a decoy. Use of crashed U. S. planes is common practice.



B-29's large size attracts attention on an airstrip where smaller Jap planes are based, may draw curious fliers into heavy AA concentration.



Airfield near Tokyo (*above*) shows a gravel-fill decoy. It casts no shadow and is not an accurate copy of any type, should not fool anybody.

Airfield at Hong Kong (*below*) has good B-29 likeness painted near revetments. Lack of a shadow is obvious even from the great height.



QUIZ ANSWERS

QUIZ NO. 1

- | | |
|---------------------------|--------------------|
| 1. Sumner Class | 4. Farragut Class |
| 2. "J"- "Z" Classes | 5. Takanami Class |
| 3. Benson-Livermore Class | 6. Terutsuki Class |
| | 7. Tribal Class |

QUIZ NO. 2

- | | |
|---|------------------------|
| 1. M-10 with British 17-pdr. | 6. U.S. M-10 |
| 2. U.S. M-7 | 7. U.S. M-36 |
| 3. Soviet SU-85 | 8. Soviet SU-76 |
| 4. Soviet SU-152 | 9. Soviet SU-122 |
| 5. British 17-pdr. on Valentine chassis | 10. U.S. M-18 |
| | 11. British SP 25-pdr. |
| | 12. U.S. M-8 |

QUIZ NO. 3

1. L to R: U.S. PT, LCVP's, LST
2. L to R: Independence Class CVL, Iowa Class BB
3. LST's
4. Judy 33
5. L to R: Three F6F's; two TBM's
6. L to R: Jake, Pete, Jake
7. Jap Kaibokan 2
8. Jap whale killers
9. Frances
10. Fletcher Class DD
11. Portland Class CA
12. New Mexico Class BB
13. AKA
14. LCI's and LVT(A)(4)'s
15. LCVP's
16. L to R: LCT (6), DUKW, two LCM's, LCT (6)
17. LVT (4), two LCVP's, six M-4's
18. Jap APD
19. Four Jap LSM's

QUIZ NO. 4

- | | |
|-----------------|----------|
| 1. F4U | 7. Judy |
| 2. Barracuda | 8. SC-1 |
| 3. TBM's, F6F's | 9. Jill |
| 4. F6F | 10. TBM |
| 5. SB2C | 11. Zeke |
| 6. OS2U | 12. FM-2 |

QUIZ NO. 5

- | | |
|-------------|-------------|
| 1. P-47N | 9. P-51 |
| 2. Spitfire | 10. Norm |
| 3. Oscar | 11. Jack |
| 4. Zeke | 12. Frances |
| 5. A-26 | 13. P-61 |
| 6. Rex | 14. Lily |
| 7. PB4Y-2 | 15. Jill |
| 8. Mosquito | |



First Japanese fighter used against U.S. forces, Zeke is still one of the most frequently seen. In its latest form, as shown on this month's cover, it continues to be a dangerous opponent. Cover picture itself is an official photograph taken at a naval air station in the United States.

CREDITS

The pictures used in the *Journal* came from the Allied Armed Services and are RESTRICTED, except for those listed below which are from private sources and are therefore unclassified.

- 3—Bernard Hoffman
- 24—Third row center, Sovfoto; fourth row left, David E. Scherman; fourth row right, International
- 38—Top, Sovfoto
- 43—First row right, Press Association, Inc.
- 48—Bottom right, Associated Press Wire-photo from USAAF

NEWS & MISCELLANY

NEWS

Stella 1 is the code name assigned to a Jap version of Germany's Storch liaison plane. Stella is unarmed. High wing is braced externally and fitted with large Fowler-type flaps. Span is 49 ft., 2 in., length 31 ft., 5 in.

New version of Irving (see picture on p. 25) has a short greenhouse without the twin steps of Model 11. Revised fuselage has clean dorsal sweep from cockpit to tail.

New Jap flying boat (uncoded as yet) has been sighted several times. It may be designed for special reconnaissance. Features include twin radial engines, parasol wing with straight leading edge and tapered, broken trailing edge. Fin and rudder are single; rear fuselage curves upward. The new flying boat should not be confused with twin-tail Cherry. Span is about 82 ft., length 55 ft.

Ki 88, new Japanese army plane, may be the twin-engine fighter frequently met by B-29's at high altitudes, although Ki 88 identity is still uncertain. The B-29 reports describe a sleek, clean design somewhat resembling the Mosquito. Low wing is small, tapers to pointed tips. Tailplane has tapered leading edge. In-line nacelles are large, underslung and extend well forward. Span is estimated to be about 45 ft., length 35 ft. The unidentified fighter is very fast and maneuverable.

Jap gliders are coded with bird names. KU-8 has been named Goose and KU-7, Buzzard.

Amagi and Katsuragi, new Jap carriers, are not built on Yamato Class battleship hulls as first reported, but probably on cruiser hulls. They are the same size as the other Unryu Class units—Ikoma, Kasagi and Aso.

Kaibokan 1 is the correct name for the Jap frigate class formerly known as PF UN-2 (see picture below). The PF UN-1 is now known as Kaibokan 2. Both classes are almost identical in armament and antisubmarine equipment. Kaibokan 2 is about 260 ft. long and Kaibo-

kan 1 about 220 ft. Kaibokan 1 has stack set farther aft.

U. S. S. Midway, first of a class of 45,000-ton carriers (CVB's), is more than 900 ft. long. It has a huge single stack. Bow and stern extend beyond the flight deck. Heavy AA battery is mounted on continuous sponsons well below the flight deck on either side. The Midway will be able to handle more than 80 twin-engine fighters.

Colossus, new class of British light fleet carriers, is roughly equivalent to U.S. CVL's. Colossuses are smaller versions of Illustrious Class. Length is nearly 700 ft. overall and standard displacement is 14,000 tons.

CORRECTION

Jap DD on page 43 of the May *Journal* is a Fubuki, not a Takanami.

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Victorious B-25 swerves away from a Jap Kaibokan 1 frigate (see text above) which it

caught in the China Sea. The sinking escort vessel's stack has been blown off by bomb hit.

FIGHTER



RAF

METEOR



DISTINGUISHING FEATURES: A low-wing monoplane with a single fin and rudder, the Meteor is propelled by twin jet units which are bisected by the wing. Almost as long as it is wide, it has a slim fuselage with a slender, sharply pointed nose. Cockpit sits far forward. The wing has wide chord at the roots. Outboard panels, which have slight dihedral, taper sharply to rounded wingtips. Unique tail assembly is well round-

ed with flat, elliptical tailplane set very high. Fin and rudder protrude below and behind the fuselage. **INTEREST:** Britain's Meteor is the first Allied jet plane to be used in combat. Produced by Gloster Aircraft, it first flew in 1943 and last summer successfully combated the V-1 bombs. Four cannons are mounted on each side of the nose. The two turbo-jet units burn kerosene. Low landing speed adds to ease of handling.

MAY 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1



SPAN: 42 ft., 10 in.
LENGTH: 41 ft., 3 in.
APPROX. MAX. SPEED:
SERVICE CEILING:

RESTRICTED

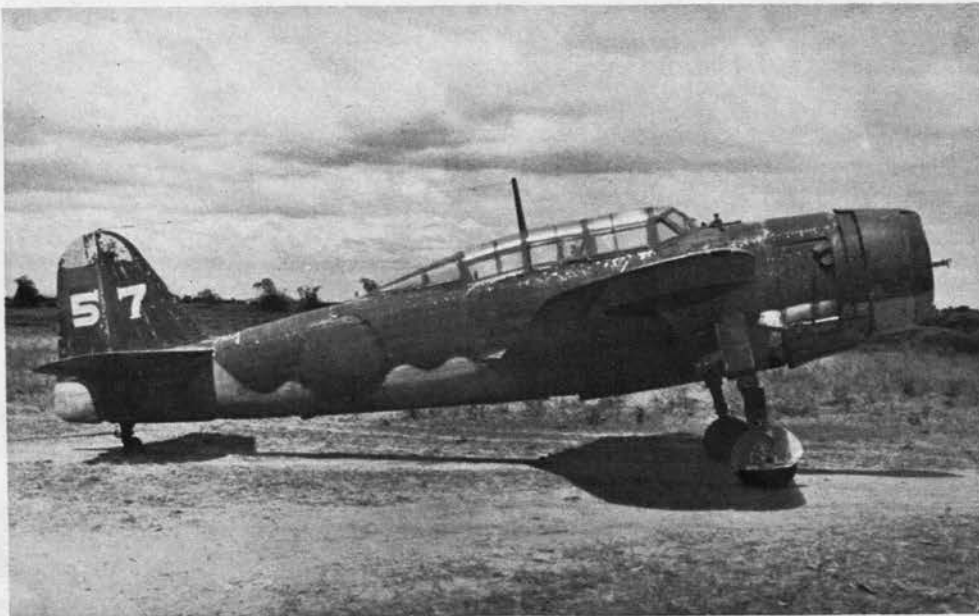
NOTE: This page is to be cut along dotted lines (above and below), added to the proper nation's section in the Recognition Pictorial Manual. The dots indicate perforations.

DIVEBOMBER



JAPAN

JUDY 33

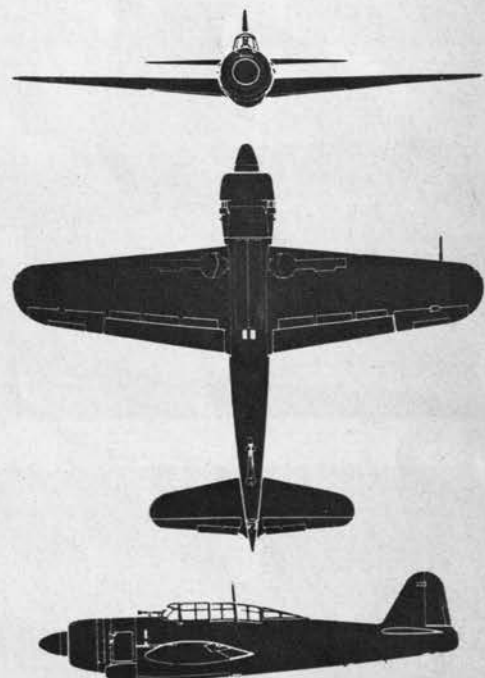


DISTINGUISHING FEATURES: Judy 33 is a single radial-engine, low mid-wing monoplane with a single fin and rudder. A medium-sized spinner protrudes from the abrupt, circular nose, which has a shallow air scoop below. Long greenhouse fairings smoothly into fuselage, which is deep in center due to bomb-bay capacity. The wing is thick at roots, has only slight dihedral, almost equal taper to leading and trailing edges,

and rounded wingtips. Tailplane is set moderately high. **INTEREST:** Japanese Judy 33 has the same recognition features as Judy 12 except for the blunt, round nose and smaller air scoop. Its performance is comparable to the 12 model. Used mostly as a dive bomber, Judy 33 has participated in Kamikaze suicide attacks. Armament consists of two 7.7-mm. guns firing through the propeller and one flexible 7.7-mm. gun in the rear cockpit.

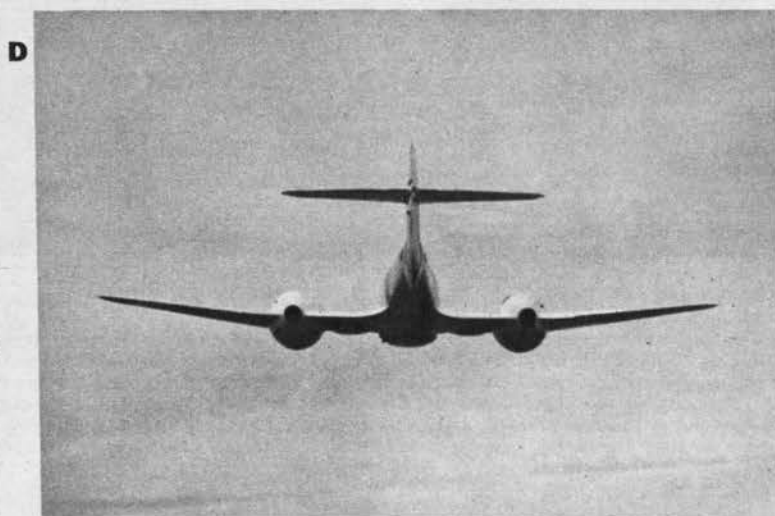
MAY 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1



SPAN: 37 ft., 10 in.
LENGTH: 33 ft., 6 in.
APPROX. MAX. SPEED: 376 m. p. h.
SERVICE CEILING: 38,300 ft.

RESTRICTED

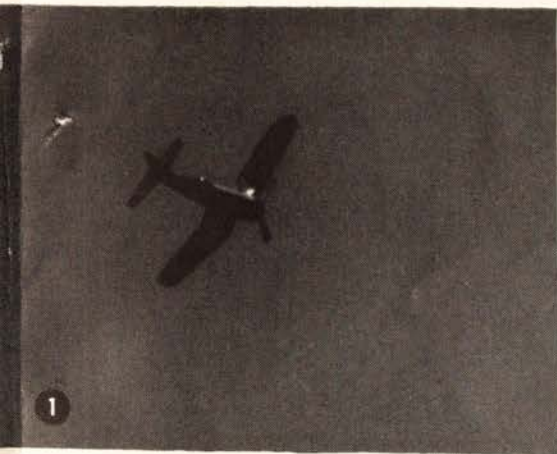


↑ **METEOR** can best be distinguished by its singular empennage. The Rolls-Royce jet units are set in the wing, like those on the German jet planes Me-262 and Ar-234. Pilot's cockpit set well forward of the wing gives exceptionally good visibility.

JUDY 33 is the first radial-engine version in Japs' new dive-bomber series. The new engine is mounted in the same air-frame as Judy 11 and 12. Change probably indicates maintenance difficulties were encountered in the inline version. ↓



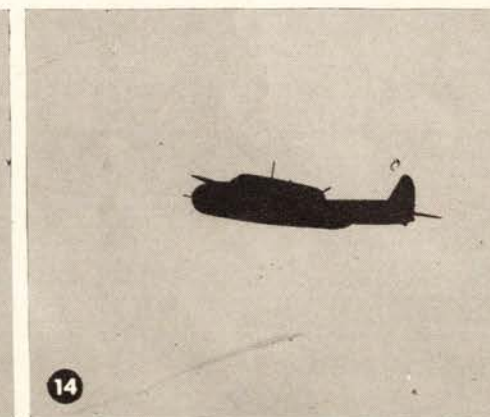
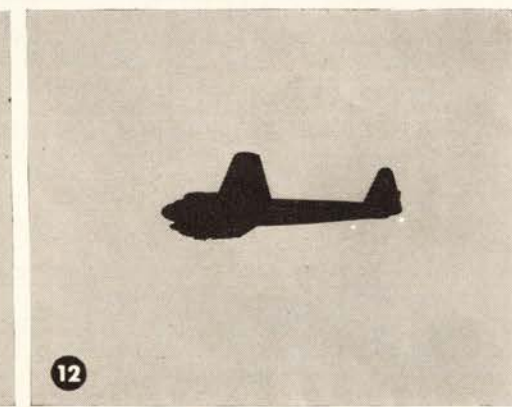
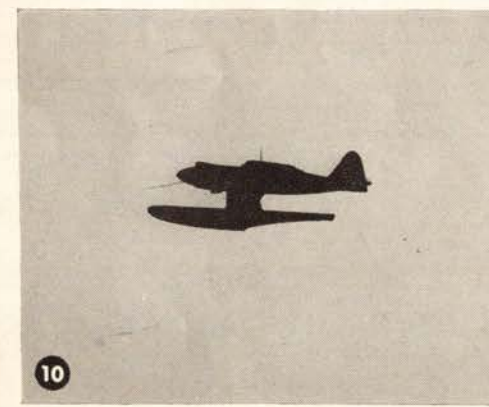
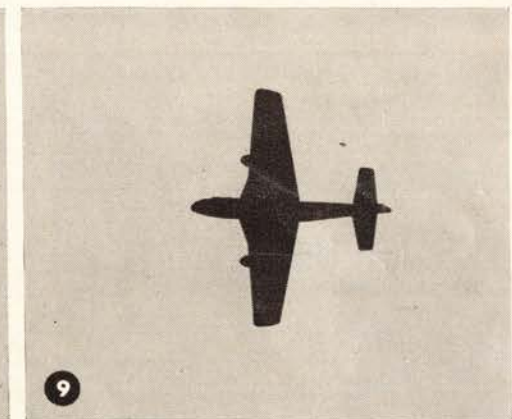
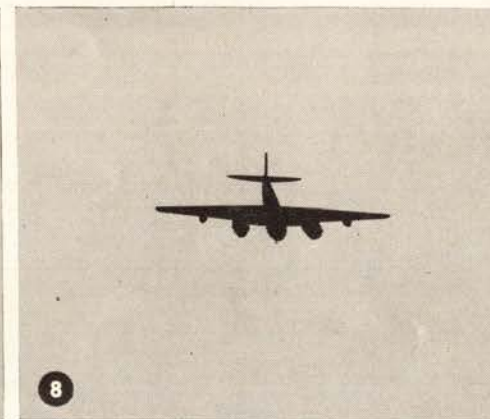
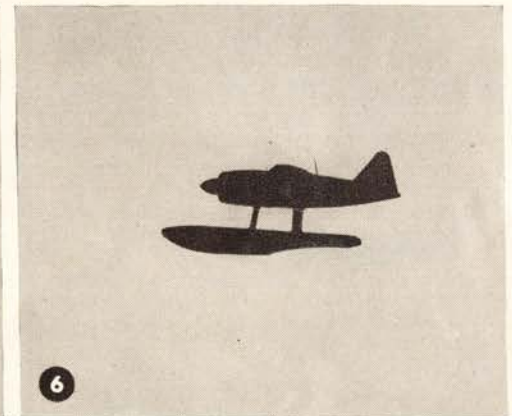
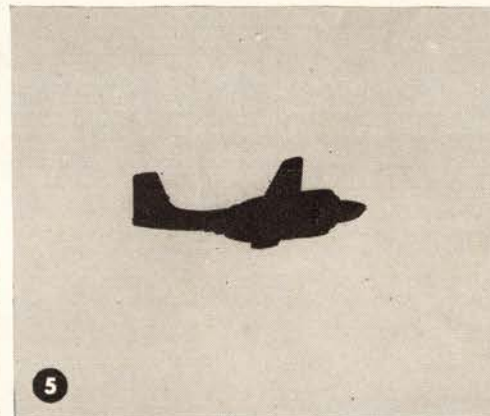
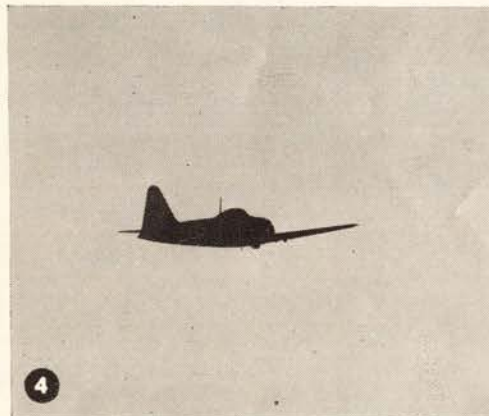
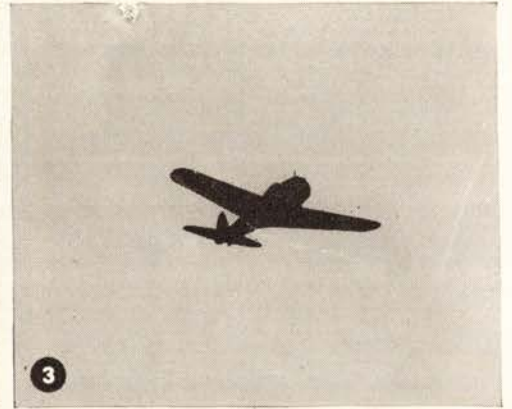
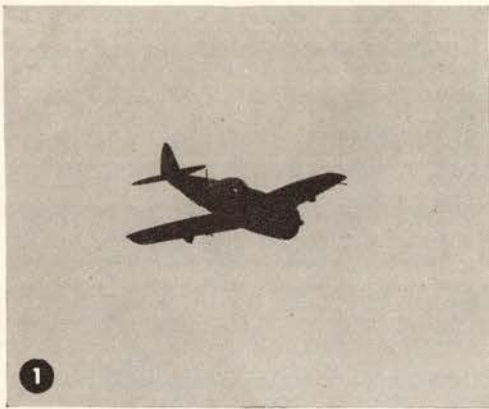
QUIZ NO. 4: AIR POWER OF THREE FLEETS



For answers see p. 48

RESTRICTED

QUIZ NO. 5: THIS MONTH'S SILLOGRAPHS

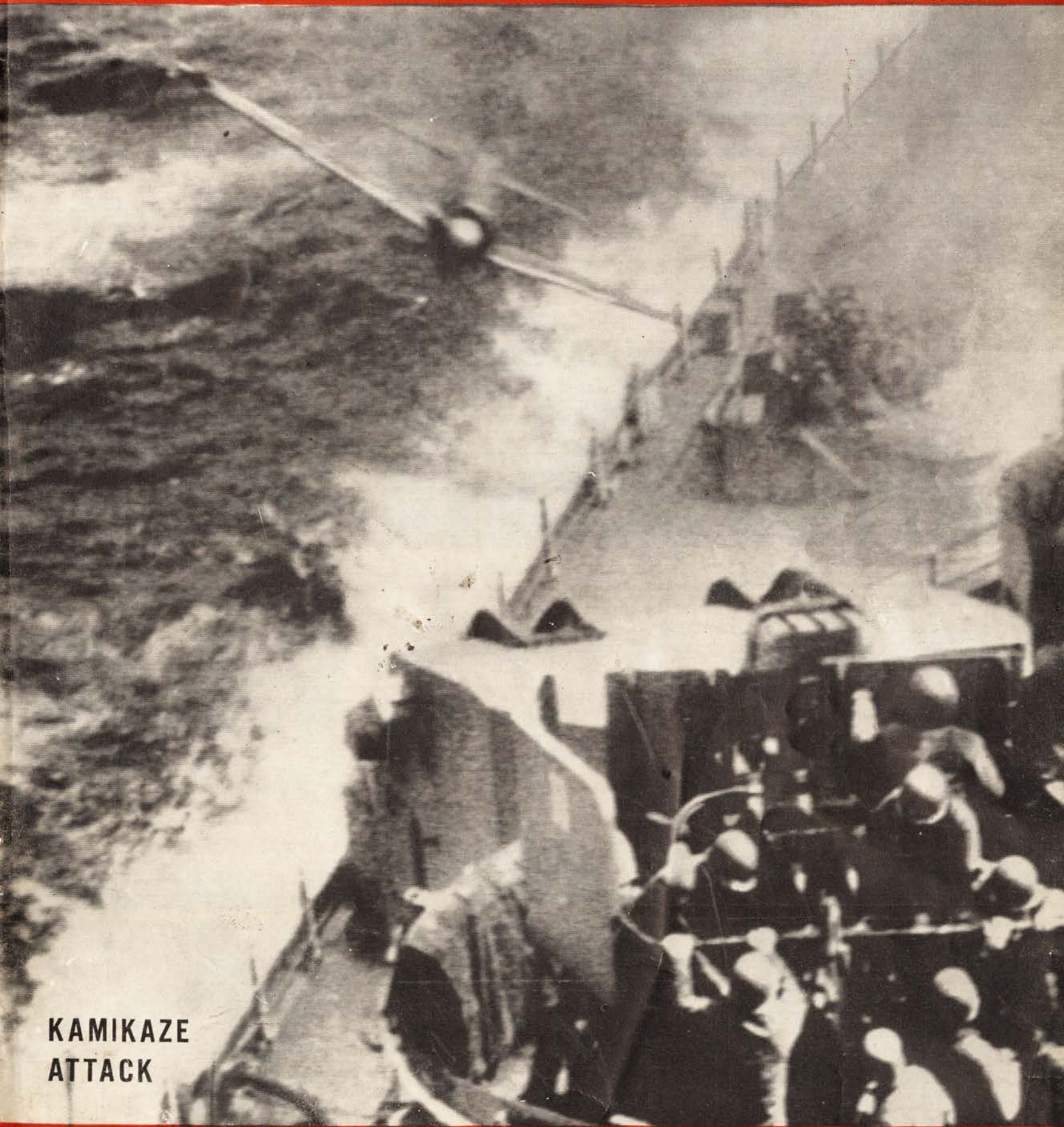


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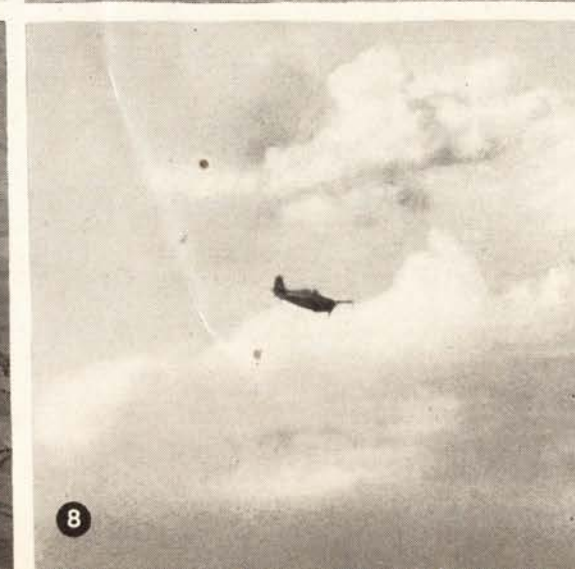
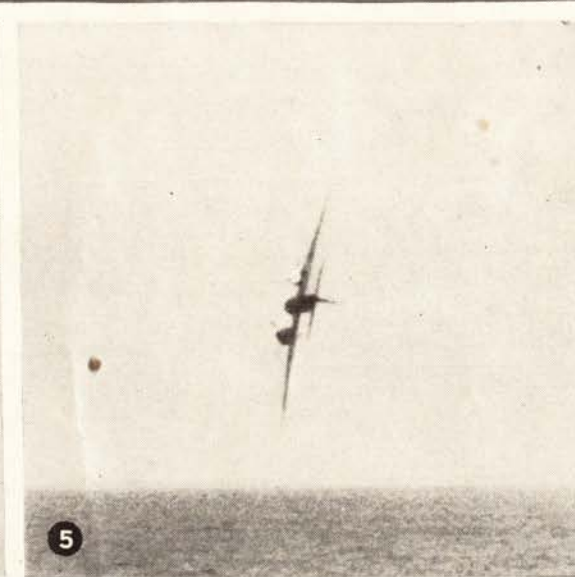
KAMIKAZE
ATTACK

~~RESTRICTED~~
JULY, 1945
NUMBER 23

WAR DEPT.
NAVY DEPT.



QUIZ NO. 1: FIGHTERS IN THE PACIFIC



RECOGNITION

NUMBER 23

JULY, 1945

JOURNAL

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JULY 33 TRAILS FUNERAL PLUMES OF FLAME AND BLACK SMOKE AFTER BEING SET AFIRE DURING A SUICIDAL ATTACK ON AMERICAN CARRIER

KAMIKAZE ATTACK

On October 25, 1944 a new Jap weapon made its first appearance in strength. On that date U. S. forces moving against the Philippines were attacked off Leyte by bomb-loaded aircraft which climaxed their attacks by crashdiving our carriers. To the best of our knowledge, this was the first time that the Kamikaze Corps struck; the first time that suicide was organized and used as a weapon with a definite place in military planning.

The first successes of the Kamikaze Corps were spectacular but, like any other weapon, it can be combatted. Though the attacks have one new element—they are seldom discouraged or driven off by the intensity of our defense—in other respects they follow the usual pattern of Jap attacks. There are no rules of approach to distinguish a suicider from any normal hit-and-run attack. Approaches may follow either the standard dive-bombing pattern or the on-the-deck attack favored by Jap tor-

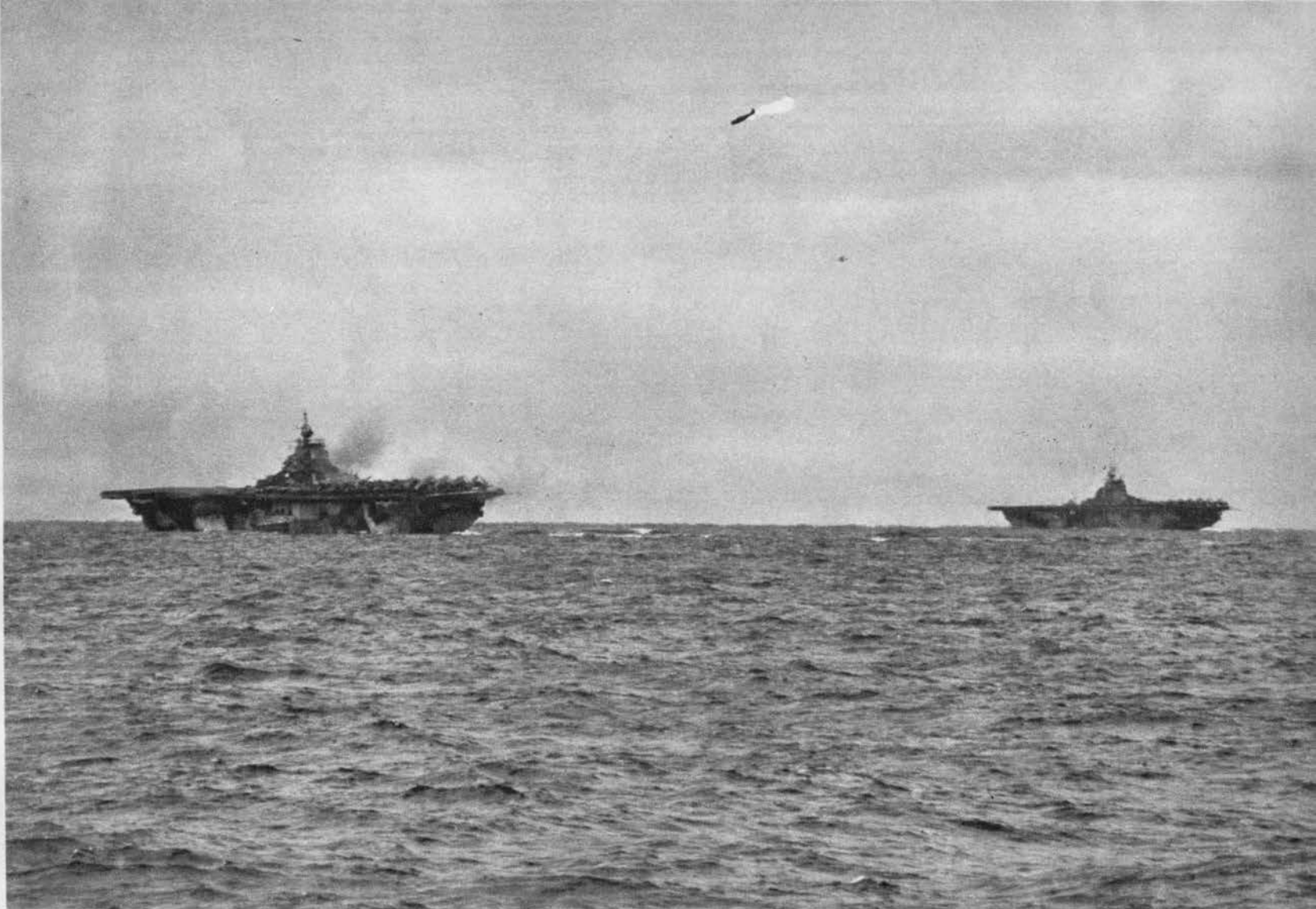
pedomen. With the exception of Baka, the planes used are the currently operational types—both single- and twin-engine. The pilots either volunteer or are drafted from established squadrons.

To recognition, however, that one new element is important. Since the Kamikaze pilots press their attacks to the death, and since time-consuming evasive maneuvers are at a minimum, quick recognition is more than ever necessary. The Jap must be spotted sooner and shot down quicker if our ships are going to escape damage. When the attacker has started his run it may be impossible to stop him even by killing him; momentum may carry his plane toward the target long after the pilot is dead. In such a case the attacking plane must be blown to bits by a heavy volume of fire. Obviously, the best time to stop these attacks is before they start their run. This is only possible when the *banzai* aircraft can be recognized as Jap immediately.



Low-level Kamikaze attack on one of our big Iowa Class battleships is shown in this sequence taken from near-by ship. Plane attacked

from stern to prevent the full battery from being turned against it. Ship's AA caught the plane as it drew abreast, shot it down in flames.



Divebomber Judy follows usual divebombing approach and attack in attempting to crash-dive the Essex Class carrier at the left (*above*).

The pilot was evidently distracted by the volume of fire from ship's AA. Below, he has overshot his target and is plunging into the sea.





Top Command Stresses Recognition

FIVE-STAR LEADERS URGE CONTINUED EFFORT BY ALL U. S. FORCES



World War II has established recognition as a vital technique of modern warfare. This fact has been acknowledged not only by Britain and the U.S., but by our enemies as well. It has been proved by too many tragedies where recognition was careless or neglected and by many unreported incidents where successful recognition fitted into the pattern of victory.

World War II will not be over until many bloody

battles are fought in the Pacific. There can be no let-up in recognition, even as there can be no let-up in the other military skills on which our past campaigns depended. At this decisive turn in the war, students and instructors must heed the comments of our high command printed below, review the objectives and importance of recognition, do their utmost to keep it at a high pitch of efficiency until Japan is beaten.

ERNEST J. KING

*Commander in Chief, U. S. Fleet
and Chief of Naval Operations*

The approach of U.S. forces to the Japanese homeland will bring Allied and enemy ships and aircraft in closer proximity. Visual recognition will play an even more important part in operations and no opportunity should be lost to give personnel all possible training in the appearance of friendly and enemy ships and aircraft.

G. C. MARSHALL

*Chief of Staff,
United States Army*

With the tremendous increase in types, mobility and range of weapons in modern warfare, the problem of distinguishing between friendly and enemy troops and matériel becomes more and more difficult. Training in the recognition of friend and foe is of great importance.

H. H. ARNOLD

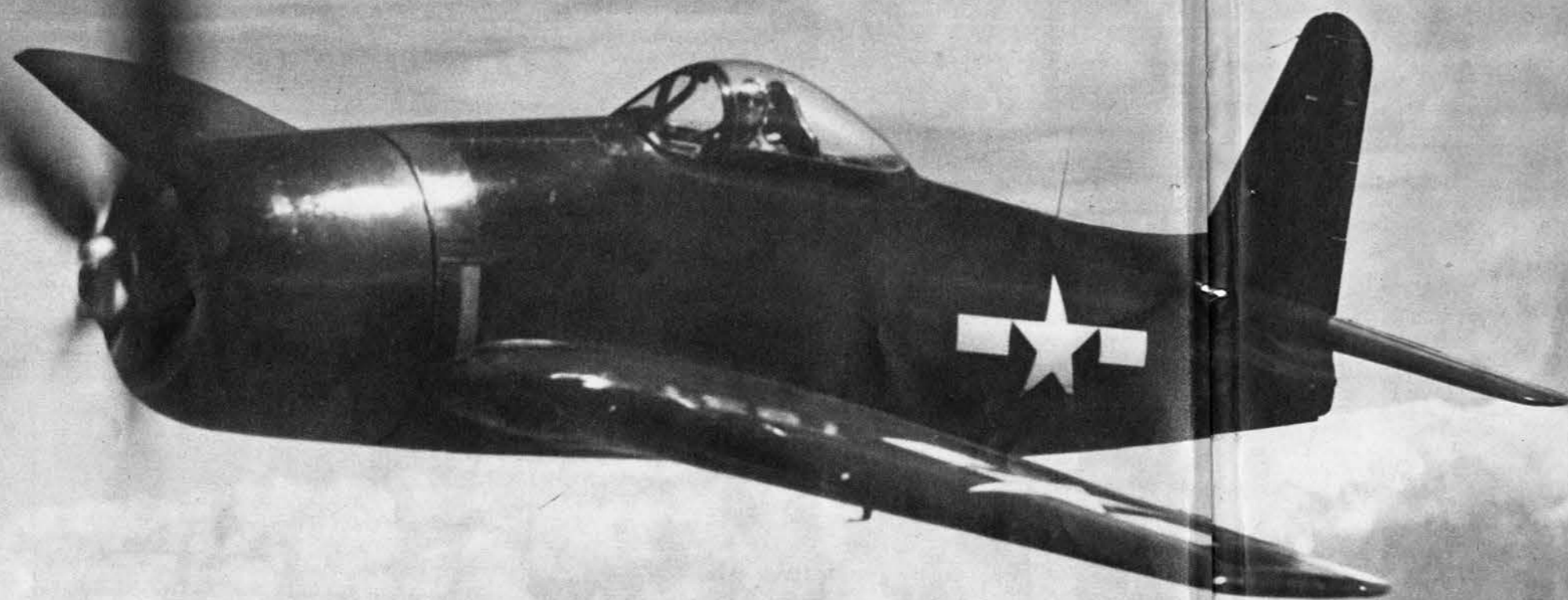
*Commanding General,
Army Air Forces*

An airman, beyond having to make the usual decisions of how, when and where to attack, is also frequently faced with another problem, whom to attack. Aircraft and ship types, our own as well as those of the enemy, are rapidly outmoded, and as rapidly replaced with new developments. Instantaneous recognition of aircraft, which move at constantly increasing speeds, is a combat advantage of first importance. No one should be assigned to a theater of operations without thorough and precise training in the identification of all friendly and opposing ships and airplanes.

CHESTER W. NIMITZ

*Commander in Chief, U. S. Pacific
Fleet and Pacific Ocean Areas*

If there is one lesson we have learned from the Pacific war, it is that constant training in visual recognition and identification for all topside battle station personnel on board ship and for all aircraft personnel is of vital and urgent importance.



NEW GRUMMAN FIGHTER HAS SLIGHTLY MODIFIED STUBBY FUSELAGE, ANGULAR WING AND TAIL SURFACES. MOST NOTABLE DEPARTURE IS ITS HIGH-SET BUBBLE CANOPY AND SLOPING NOSE COWLING



Bearcat combines recognition features from both the Hellcat and Wildcat. Like the F6F it has low mid-wing. Like FM-2, its nose is round, its wing unbroken with dihedral from roots.



Belly line of the new Grumman fighter is practically straight. The area of its tall, angular fin and rudder has been increased by the addition of a dorsal fin for greater lateral stability.

GRUMMAN

F8F continues company's line

Latest and most spectacular fighter to be developed for the U. S. Navy by Grumman is the F8F Bearcat. Though no exact figures on its performance can be released this early in its career, its tests have shown it to be superior to any other carrier-based fighter. It is faster, has a higher rate of climb and a shorter take-off run. It can maneuver with the best of the Japs—Frank, George, Zeke and Jack. And unlike the Japs, the Bearcat is a tough product—it will get there, put up a fight and, above all, get its pilot home.

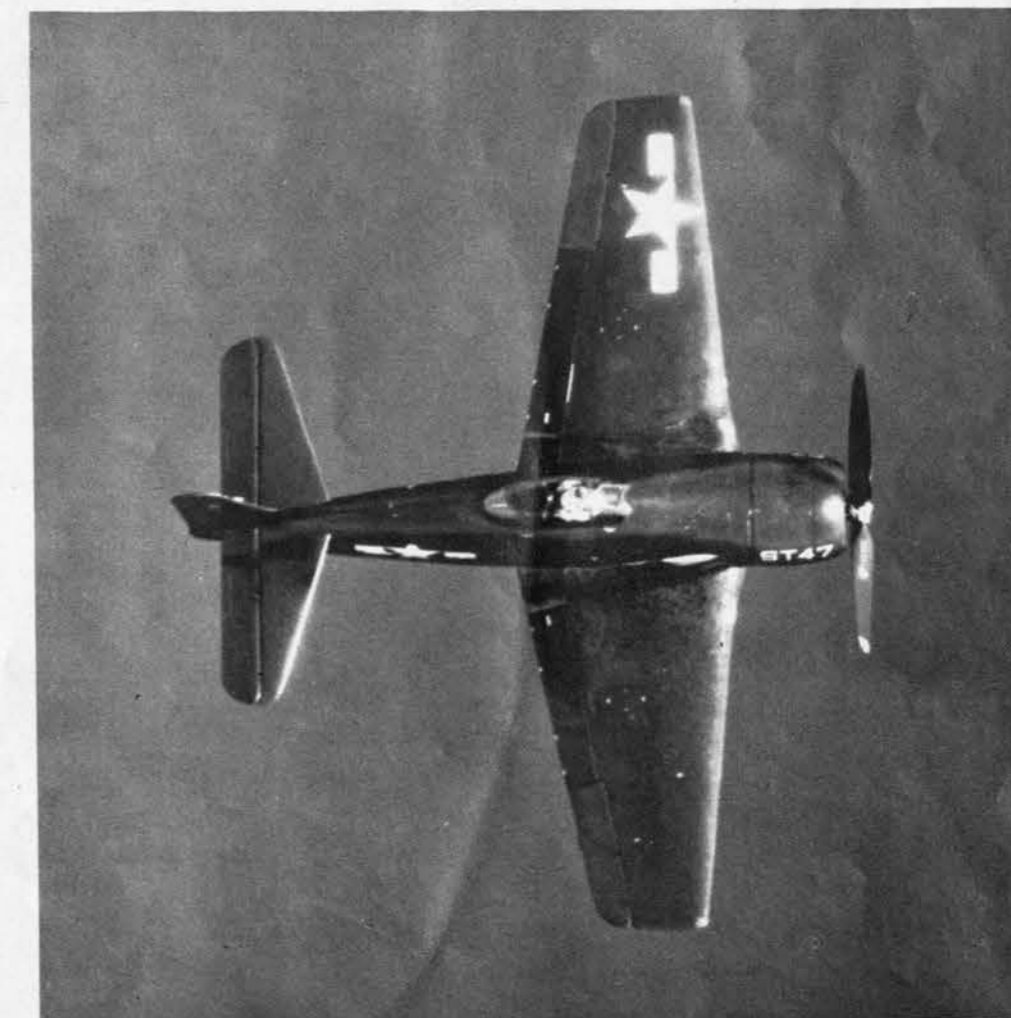
The Bearcat marks a return to the Grumman single-engine design, bears a close kinship to the Navy's reliable F6F and FM-2. It is, however, smaller and

BEARCAT

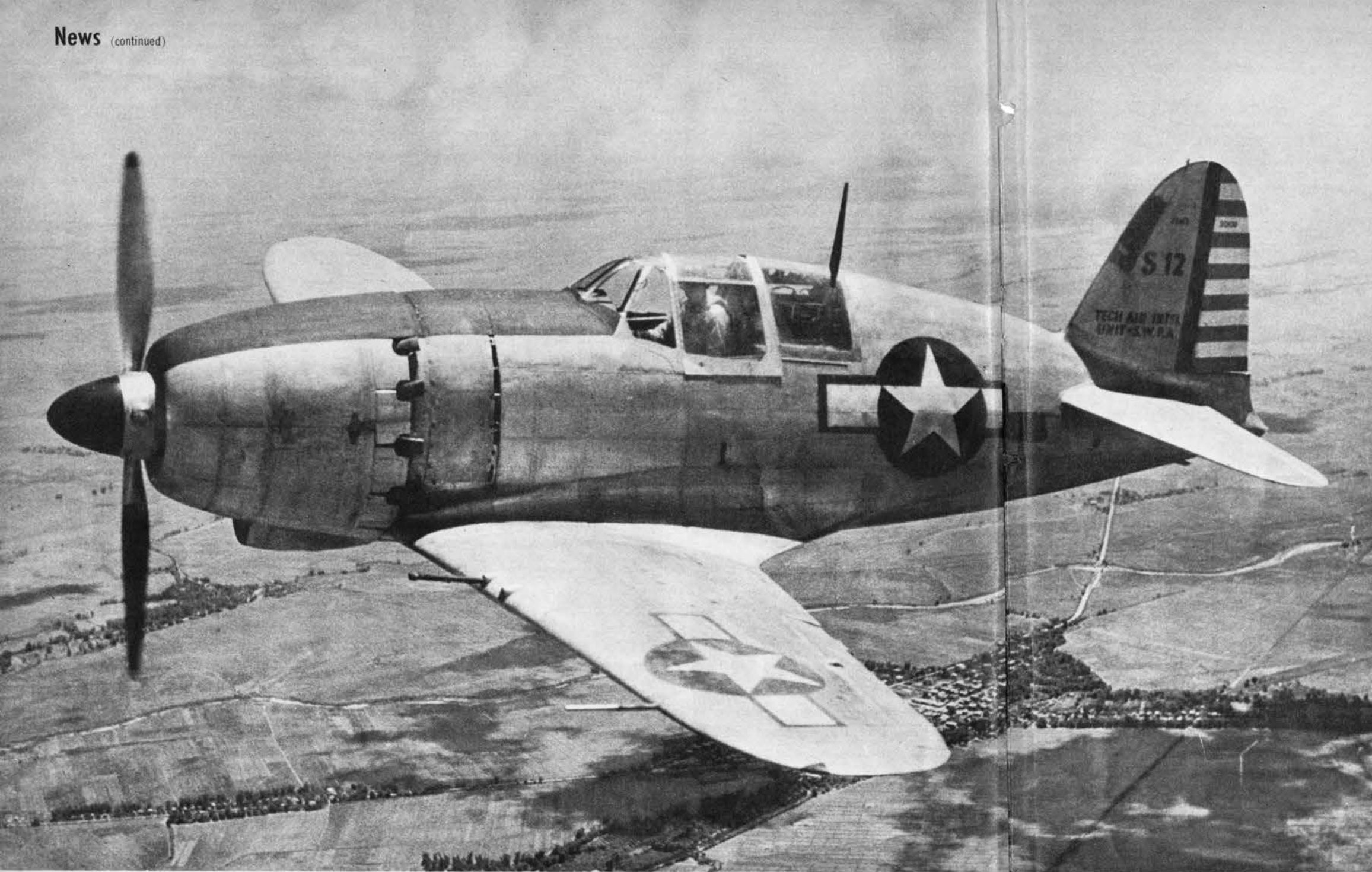
of top Navy fighter aircraft

more compact (span: 35 ft., 6 in.) than either the Hellcat (span: 42 ft., 10 in.) or the earlier Wildcat (span: 38 ft.). Its shorter fuselage means that many more Bearcats can be spotted on the carrier deck than the present F6F's.

Though the aircraft is unmistakably a Grumman product, slight changes have greatly improved the pilot's visibility. The cockpit is set high amidships and the cowling falls away to a blunt nose. With this modification the pilot can see the deck much clearer when bringing the plane in for tricky carrier landings. Like most of the Allies' newer fighter models, the Bearcat also has a bubble canopy for "round-the-clock" visibility in flight.



Seen from above Bearcat might be mistaken for FM-2 but both wing and tail surfaces have a more pronounced taper and the tailplane lacks the bite found on older Grumman planes.



U. S. MARKINGS CANNOT DISGUISE THIS CAPTURED JACK'S FAT, DEEPLY CURVED FUSELAGE. STUBBY IN DESIGN, JACK HAS A FAIRED COCKPIT SET

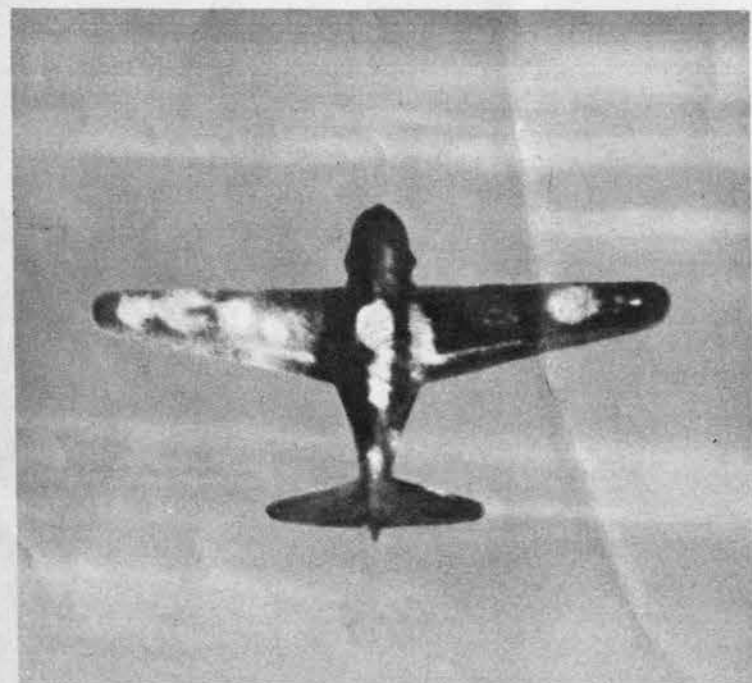
MUCH FARTHER BACK THAN ON MOST JAPANESE FIGHTERS



Four-engine Tachikawa Field 104 may be a transport or long-range bomber. Broad wing is set low or mid-low on round fuselage somewhat like that on two-engine Betty.



New flying boat, Ibusuki Field 82 has a parasol wing, single tail assembly. Wing is straight along leading edge, and inboard trailing edge, making it look swept-forward.



Unidentified Jap fighter suggests George in wing but nose and fuselage differ. It may be Sam, new carrier plane, now in limited service.



Gun camera shot of floatplane Rex substantiates the details shown in rendering in the June Journal. Note short span of plane's low wing.

JAP PREVIEW

Various sources have produced the photographs of the new Japanese planes shown in this month's *Journal*. The beautiful picture of Jack which heads this page was taken by a Technical Air Intelligence Unit which has flown the captured and overhauled plane and tested its military capabilities. The first pictures of Rex and possibly Sam turned up in the gun cameras of the planes which destroyed them.

The aerial photographs at the right reveal three completely new planes: a four-engine transport or bomber, a flying boat and a probable medium bomber. These planes may be experimental designs which will never appear in combat, but they may be the first models of important combat weapons. For the present they have names made up of the field where first seen and the wing-span in feet, as for example, Tachikawa Field 104.



Probable twin-engine bomber, Tachikawa Field 86 has a long, thin fuselage and wing set close to the nose in typically Japanese fashion. The fin and rudder are single.



NEW LINCOLN IS THE RAF'S BIGGEST BOMBER. FUNDAMENTALLY AN ENLARGED LANCASTER, LINCOLN HAS MORE SPACIOUS, GRACEFUL LINES

BRITAIN ADDS NEW BOMBER & LIGHT CARRIER

Although entirely different weapons, Britain's Lincoln bomber and Colossus Class CVL have two traits in common. Both follow closely the British design traditions in their respective fields. Both strongly resemble veteran British weapons that have been familiar during most of the war.

The Lincoln is essentially the successful British Lancaster design, reworked on a larger scale. Span is 120 feet, length 78

feet, as opposed to 102 and 69 for the Lancaster. Its engines are Merlin 85's, rated at 1,750 hp.

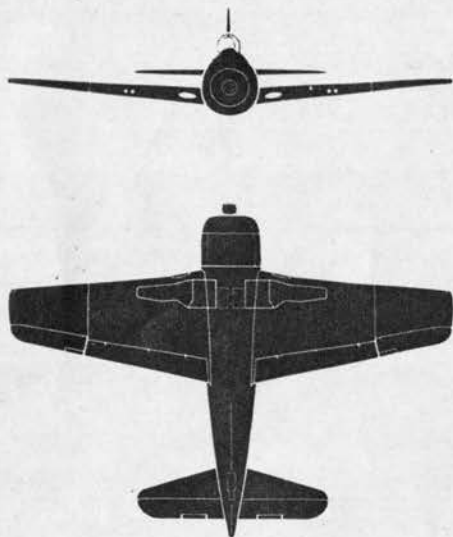
Although the Colossus Class is an original CVL design, it is clearly descended from the Illustrious ships and the experimental CVL Unicorn. Ample freeboard, blocky island and flight deck that blends into the hull at bow and stern are among the features shared by all three classes.



Colossus Class, new British CVL, is 695 feet long, displaces 14,000 tons. Although this is a new size for British carriers, the Colossus

resembles operational ships in appearance. The island is typically British, set forward of amidships and topped by lofty tripod mast.

NEW AND REVISED AIRPLANE SILHOUETTES



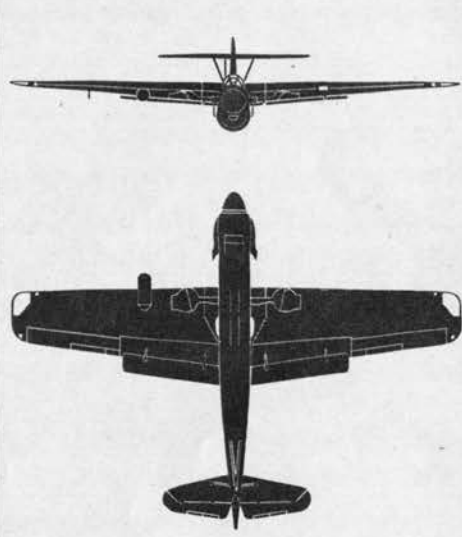
F8F

SPAN 35 FT. 6 IN. LENGTH 27 FT. 6 IN.
NEW SHIPBOARD FIGHTER FOR THE U.S. FLEET



FIREBRAND III

SPAN 51 FT. 3 IN. LENGTH 38 FT. 10 IN.
THE ROYAL NAVY'S LATEST ATTACK PLANE

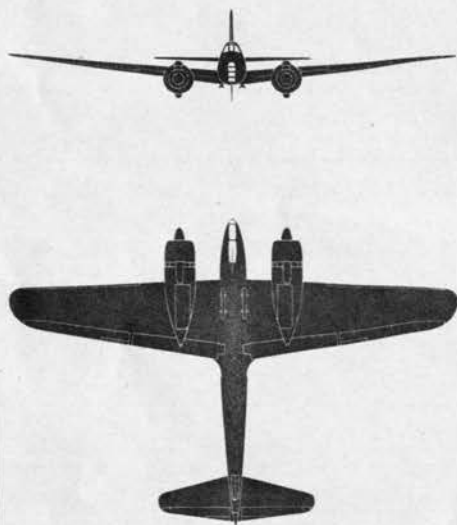


BARRACUDA V

SPAN 52 FT. 8 IN. LENGTH 40 FT. 9 IN.
MODIFIED NAVY BOMBER HAS EXTENDED FIN

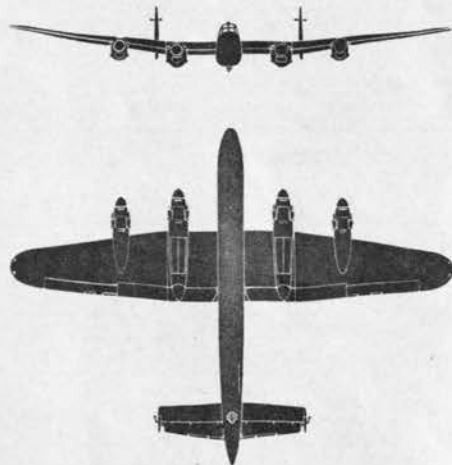
New U. S. Navy fighter, the F8F Bearcat has Grumman square wing and tail lines and sturdy fuselage (see pp. 8-9). The Blackburn Firebrand III is a big, single-seat attack plane for carrier oper-

ations. Extremely narrow fuselage and the tall, square fin and rudder are its main recognition features. Recent Barracuda revisions include a broad fin extension and installation of a Griffon engine.



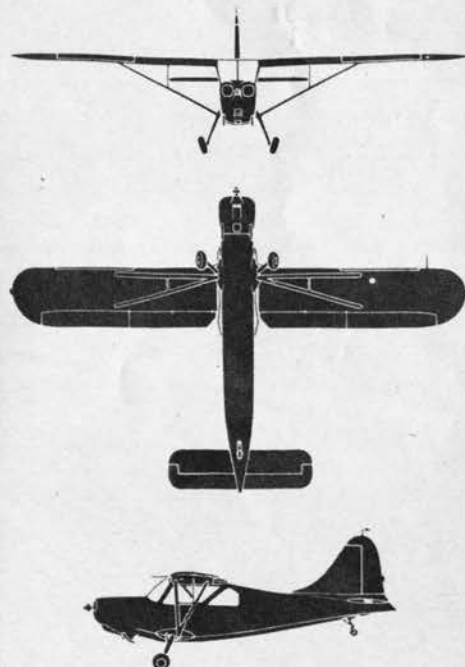
IRVING 11 (MODIFIED)

SPAN 55 FT. 9 IN. LENGTH 39 FT. 11 IN.
JAP FIGHTER HAS SHORTENED GREENHOUSE



LANCASTRIAN

SPAN 102 FT. LENGTH 76 FT. 9 IN.
FAST TRANSPORT VERSION OF LANCASTER



L-5B

SPAN 34 FT. LENGTH 24 FT. 1 IN.
U.S. LIAISON PLANE CAN CARRY WOUNDED

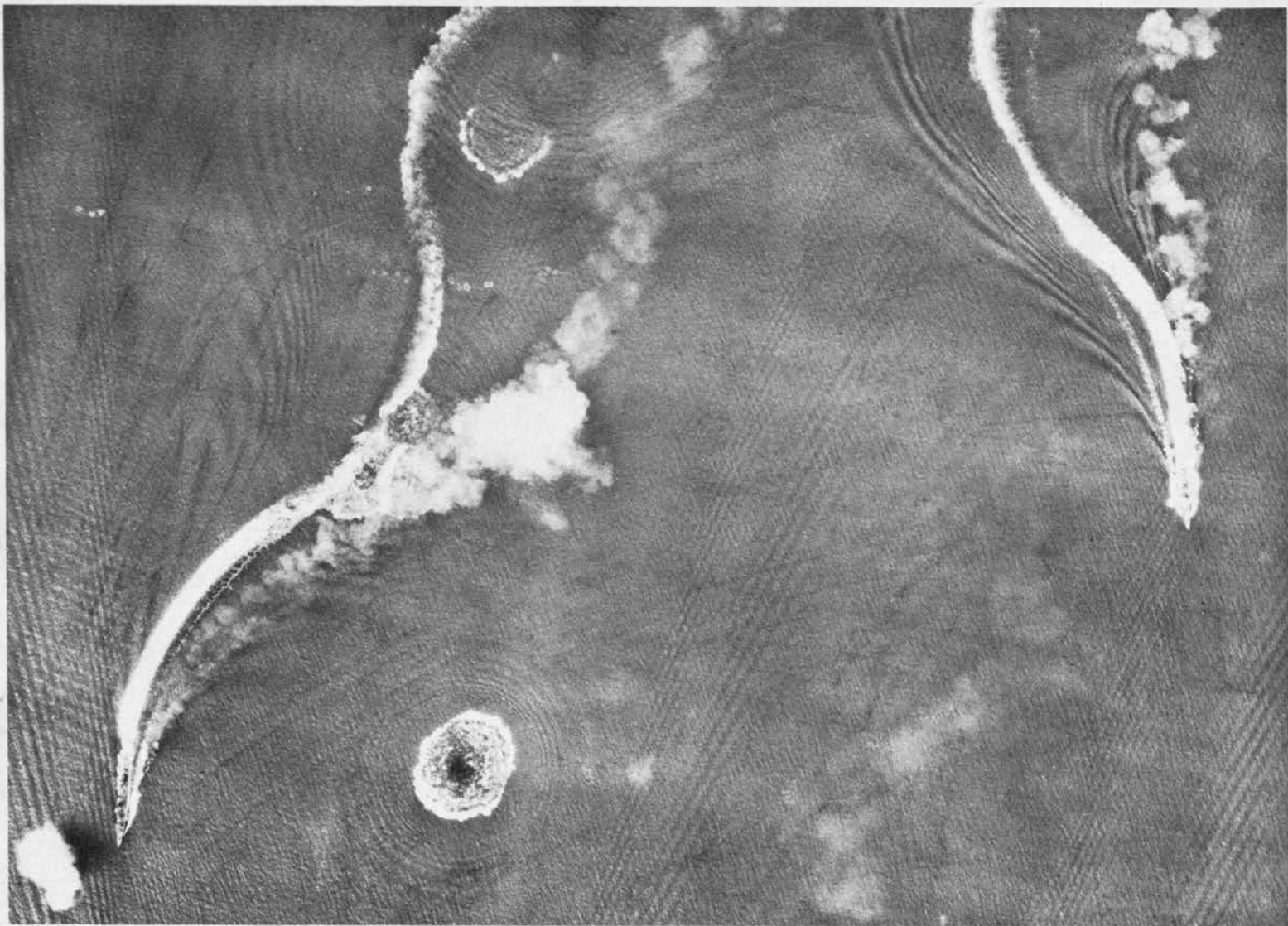
Modified Irving has the rear section of its greenhouse cut away, giving it a long, clean dorsal line. The British Lancastrian is nothing more than a Lancaster with its turrets removed and its nose

and tail streamlined for high-speed transport duty. As a result of Allied experience in Burma, the L-5 Sentinel has been modified as the L-5B so that a litter can be carried in its deeper, wider fuselage.



Japanese fleet at anchor turns Kure Harbor into a museum of hull shapes. Long rectangular plan separates two carriers (*upper right, upper center*) from conventional, curved hulls. Merchant ships can be spotted by their ample beam and lack of streamlining. In the center

of the harbor and near the quay (*upper left*), older battleships show their wide beam, deeply curved sides. Rounded stern, tapering, blunt-ended bow distinguish the modern battleship (*center*). Destroyers and escorts moored inshore show up as rows of splinters from this height.



DODGING AT HIGH SPEED TO AVOID BOMBS, TRIM JAP DESTROYERS TRAIL DISTINCTIVE WARSHIP WAKES—LONG, SNAKY CURVES OF WHITE WATER

HIGH FLYING VIEWS

Flying at high altitudes, Army heavy bombers have specialized problem in ship recognition

Now that the fighting is over in Europe, emphasis has shifted to the Pacific—an amphibious theater of war. From now on, most major air operations will take place over waters where U. S. and Japanese ships are cruising. This makes ship recognition an important problem for all Army airmen including those who fly at extreme heights. At high altitudes, ship recognition is, of course, restricted in scope but within limits it is a very important recognition job which aircrews can and must do.

At high altitudes it is practically impossible to recognize a ship by its class. However, aircrews should be able to answer three basic recognition questions about a sighting: is it friendly or enemy; merchant convoy or task force; and what type is it—battleship, carrier, merchant vessel, etc. Nationality is usually determined by where the ship is; *i.e.*, airmen are briefed as to the probable position and nature of U. S. and enemy forces.

General differences between convoys and task forces may be useful recognition guides if their limitations are kept firmly in mind. Merchant ships usually travel in well-spaced parallel columns, surrounded by swifter escort vessels that dart in different directions on their patrols. Task forces almost always have heavy units such as battleships, carriers and cruisers for a core

with destroyers running interference ahead, astern and on the flanks.

Since differences in formation may not be enough for recognition, the airman must also depend on the contrast in behavior between a convoy and a task force when sighted or attacked. Merchant vessels will usually maintain course while their naval escorts up speed sharply and make sharp turns and sweeps around the huddle of tankers and freighters. On the other hand, when a task force is alerted all ships will put on more speed, executing tight circles and snakelike maneuvers in every direction. Although the ships themselves may be difficult to make out, their actions will usually be highlighted by wakes. Wakes cannot be relied on for recognition since they are greatly influenced by the condition of the sea. Normally, however, a merchant ship wake, while broad, is never so long, turbulent and curling as that of a warship.

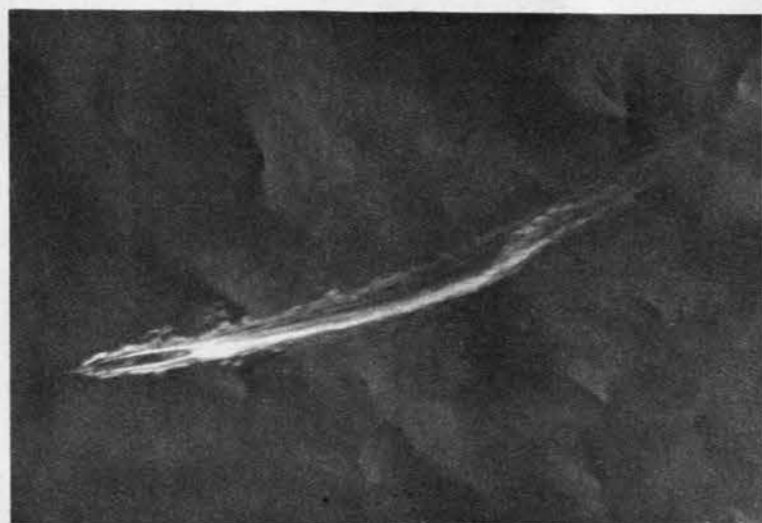
Finally there is the problem of identifying individual ships by type. From extreme heights, the only visible feature of a ship may be its hull shape. Although this is slim evidence, it may permit type recognition because of the differences in length-to-beam ratio among the major naval categories. The subject of basic hull shapes was discussed in detail on pages 20-23 of *June Journal*. On these and following pages are realistic examples of its application.



SINGAPORE ROADSTEAD SHELTERS FOUR BROAD-BEAMED MERCHANT SHIPS, A CRUISER AND A NUMBER OF SLIM ESCORT VESSELS. ANOTHER CRUISER IN THE DRYDOCK (TOP CENTER) HAS STERN BLOWN OFF BUT SHOWS EXTENDED TAPER OF THE BOW. NOTE OUTLINE OF SUNKEN DRYDOCK (TOP LEFT)



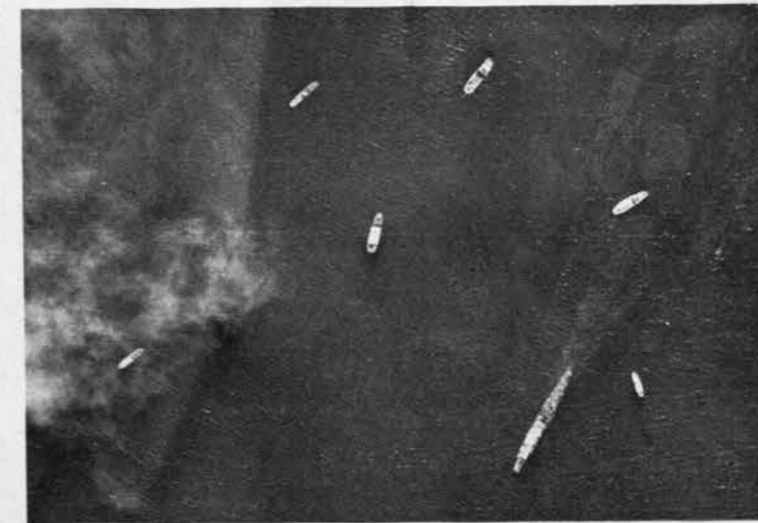
Curveting cruiser has a long, trim but substantial hull. The spacious sweep of bow and stern distinguish it from more compact destroyer.



Submarine hull is largely submerged even when vessel is surfaced. Distinct fringe of white water surrounds sliverlike outline when underway.



Flatsided freighter has abbreviated bow and stern. Wake is broad, but, because of slow speed, is less violent and distinct than a warship's.



Unusual hull shapes are displayed by Jap LSM and short, stubby sea trucks. LSM's angular outline suggests recent Jap merchantmen.



Japanese task force shows one standard naval formation—a core of powerful battleships (*lower center*) screened by cruisers ahead and

destroyers on either flank. Massive beam of battleships stands out in contrast to the cruisers' graceful length and slighthness of destroyers.



Vast expanse of sea dwarfs the Japanese battlefleet, visible chiefly by wakes. Above, heavy units leave straight white trails while the light-

er vessels snake in and out. Later view (*below*) shows that even the big battleships (*left and center*) are able to take violent evasive action.





DESIGNED AS A LIGHT BOMBER, MARY BECAME RECONNAISSANCE PLANE, THEN A TRAINER. IT HAS BEEN REPORTED AT OKINAWA AS SUICIDE PLANE

JAPANESE TRAINERS

They have been sighted frequently over Japanese home islands by U.S. fighter planes

Now that low-flying U.S. fighters can range over large sections of Japan, they are encountering some of the enemy's non-combat aircraft, especially training planes. While these trainers do not constitute a recognition problem in the sense of distinguishing friend from foe, accurate reporting of their presence in given areas helps intelligence officers determine the distribution of Japanese fighter and bomber strength.

Numbering some 30 to 40 types in all, Japan's trainer fleet is divided into three groups. First, there are those which have been designed as trainers and are code-named after trees. Four of these—Cypress, Spruce, Willow and Hickory—are shown on the

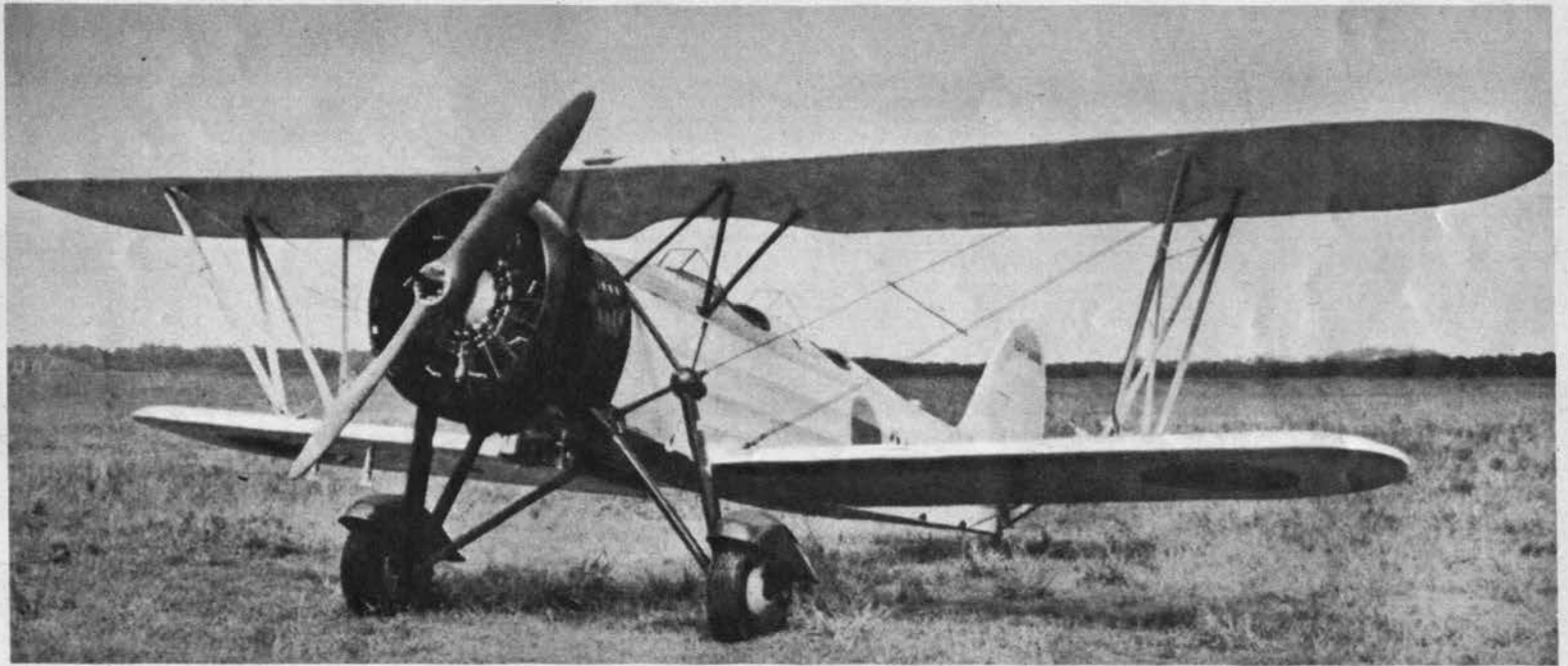
opposite page. A fifth, of which no picture is available, is called Pine.

The second trainer group (see pages 22-23) consists of obsolete fighters, reconnaissance planes and light bombers such as Mary (above). While they look more modern than most of the "Tree" group, fixed landing gear and lack of speed set them off from combat designs. Finally there are obsolescent fighters and bombers, among them Sally 1, Val, Kate, Zeke 21, Oscar 1 and Nell, which are used in the training program's advanced stages. Unlike the planes in the first two groups, these are potential combatants. They look too much like the fighting versions to permit positive recognition as trainers, and they may be used as suicide bombers.



Cypress, a primary trainer used by both army and navy, was originally a German design. First built by Bücker Jungmann, it is a small two-seat

biplane. Air-cooled inline engine may be either a 110-hp. Hitachi or a 100-hp. Hirth of German manufacture. Above: German version.



Spruce is an army plane, somewhat larger and more powerful than Cypress (*top*). Its 350-hp. engine suggests that it is an intermediate

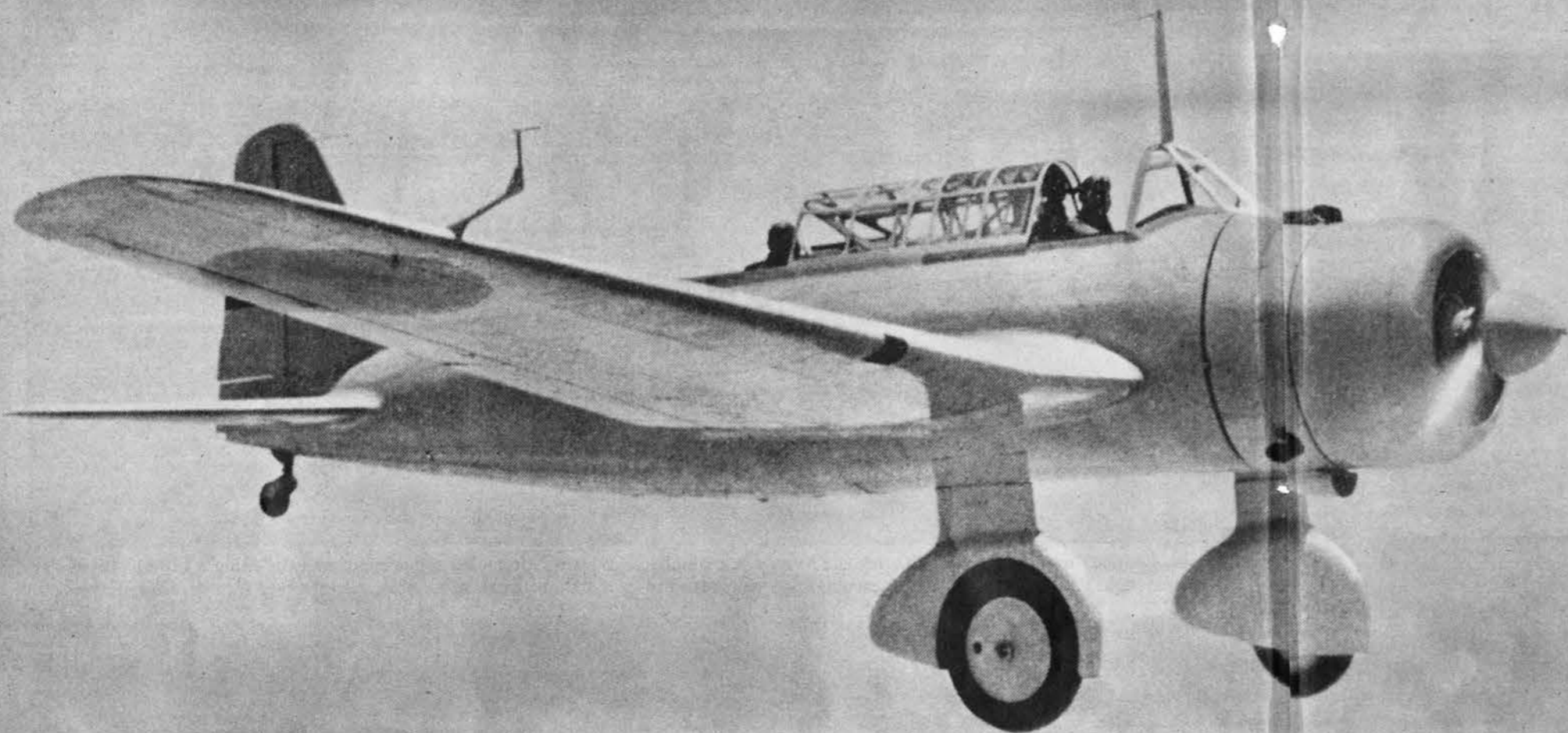
trainer. Upper and lower wings are of unequal span with straight trailing and leading edges. A speed ring cowling encloses the radial engine.



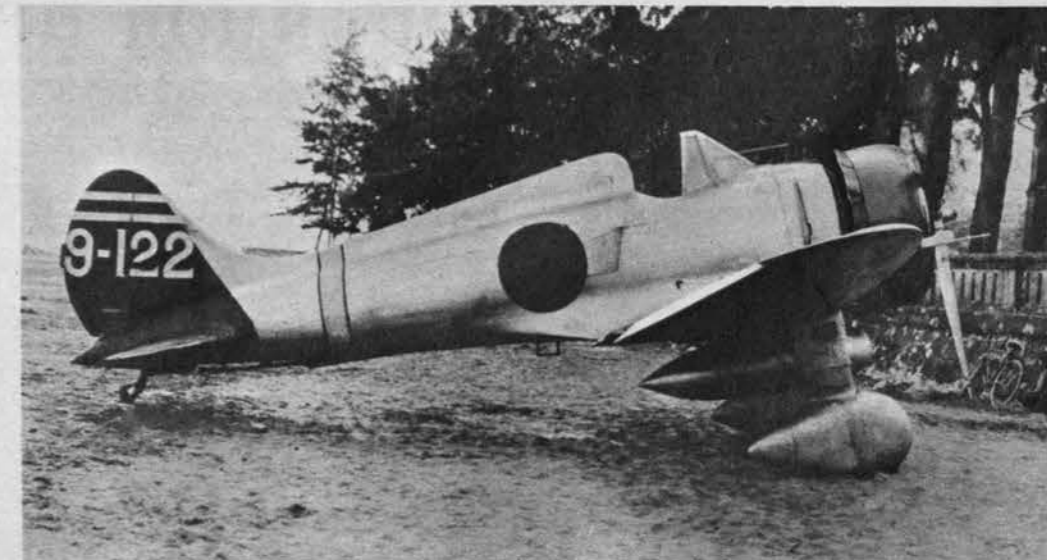
Willow, intermediate navy trainer, is used both as a landplane and seaplane. Tailplane has deep notch where elevator and stabilizer meet.



Hickory is twin-engine transport and advance trainer. It is smaller than Helen and Peggy, fatter and slower than twin-engine fighters.



ANN IS AN OLD RECONNAISSANCE PLANE AND POSSIBLY LIGHT BOMBER WHICH NOW SERVES AS A TRAINER. A TWO-SEAT MONOPLANE WITH A HIGH GREENHOUSE, IT BEARS STRONG RESEMBLANCE TO SONIA



Claude preceded Zeke as the Japanese navy's standard carrier-based fighter plane. Next to Zeke 21, it is now the Japs' fastest single-seat navy trainer. Claude first appeared in operation in 1937.



Ida is an old reconnaissance plane, now used as an army trainer. The thick fuselage and faired cabin make Ida appear exceptionally small, but its span and length approximate those of Babs.



Babs, like Ann (top), is a retired reconnaissance type. It was developed from commercial plane "Kamikaze" which made a record Tokyo-London flight in 1937. Later version (above) was a two-seater with a long, faired greenhouse. Fixed landing gear is covered with large spats.



Nate, with Chinese markings under its wing, undergoes inspection by U.S. fliers. This plane, which first appeared in 1937, was the Japanese army's top fighter until Oscar was introduced. However, as late as 1943 it was still being used in CBI, although on a very limited scale.

QUIZ NO. 2: ALLIED ARMOR HITS THE JAPS





DECKS SHATTERED AND GUNS DESERTED BY THE CREW, A CRIPPLED PC-13 SUBCHASER AWAITS THE COUP DE GRACE FROM ATTACKING PLANES

JAP MINOR COMBATANTS

Patrol and escort vessels figure prominently in latest phase of the Pacific naval war

Japan is now fighting the war at sea with land-based air power and a fleet of minor combatants. Enemy heavy units may be seen in limited numbers, but frigates, sub-chasers and other small craft are an immediate and constant problem in ship recognition. These are the ships that guard Jap convoys; these are the warships that most of our airmen and fleet lookouts see.

Certain old classes are rather weak, but wartime designs like the Kaibokan frigates have a sturdy build, fair speed and efficient AA protection. Although designed for specific tasks—mine-sweeping, patrol, etc.—most are adaptable to many uses and are likely to be met under a wide variety of combat conditions.

The minor combatants reflect Jap concepts of naval architecture. Bridge, stack and mainmast rise from the deck as individual units, creating distinct superstructure breaks. Tripod masting predominates and almost all large units have rudimentary mainmasts. As a group, they also have certain general traits—forecastle deck, prominent stack and bridge set well forward.

With the shift in recognition emphasis to this relatively little-known group, there have been urgent and increasing demands for pictures and data from all Pacific sectors. On the following pages is a survey in drawings of the minor fleet and the best new pictures. For most practical purposes, this is the enemy at sea.

JAPANESE MINOR COMBATANTS

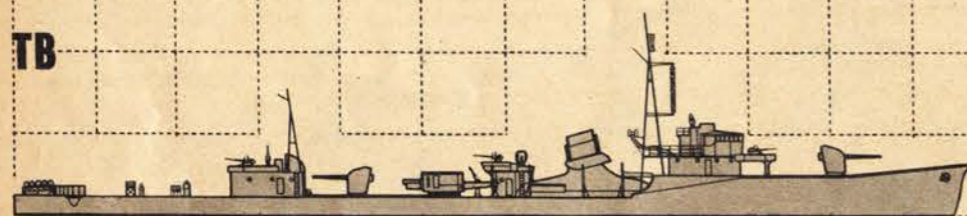
PRINCIPAL TYPES BY CLASSES

RESTRICTED

Shown on this chart are the 16 outstanding classes in Japan's minor combatant fleet. With the decline of Japan as a major sea power, these smaller vessels are growing in relative importance. From now on the majority of warship sightings made by our forces will be the ships shown on these pages rather than the enemy's surviving heavy units. Although small in size and firepower, most are sturdy ocean-going vessels. Ships specifically designed for escort and patrol make up the important majority of the group, but the other types of vessels are generally adaptable for such duties. Consequently, this section of the enemy's fleet is of great importance in our sustained campaign against Japanese merchant shipping. Note the new classification of patrol frigates; Kaibokan 1 was formerly known as PF UN-2, Kaibokan 2 as PF UN-1.

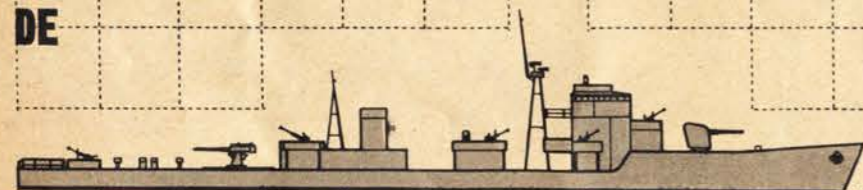
SCALE: EACH SQUARE EQUALS 25 FT.

TB



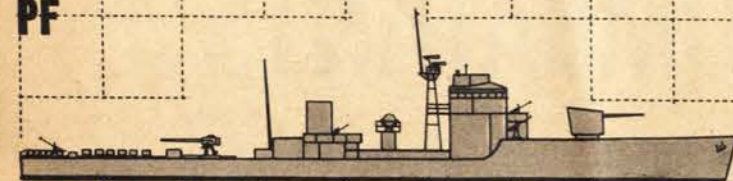
CHIDORI-OTORI CLASS

DE

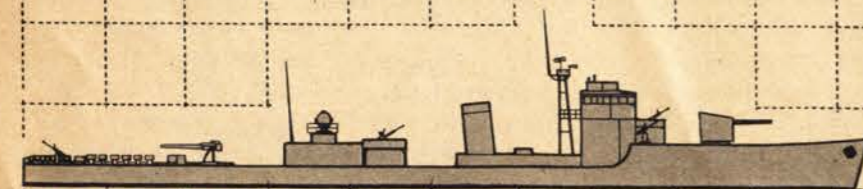


DE UN-1 CLASS

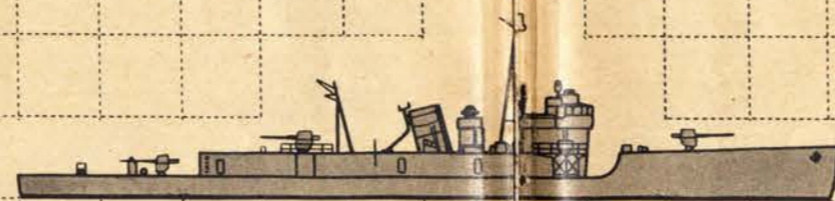
PF



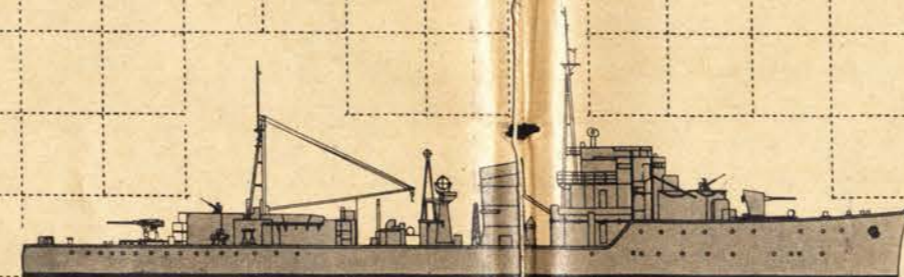
KAIBOKAN 1 CLASS



KAIBOKAN 2 CLASS



SHIMUSHU CLASS



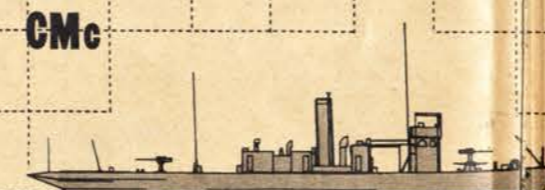
MIKURA CLASS

CM



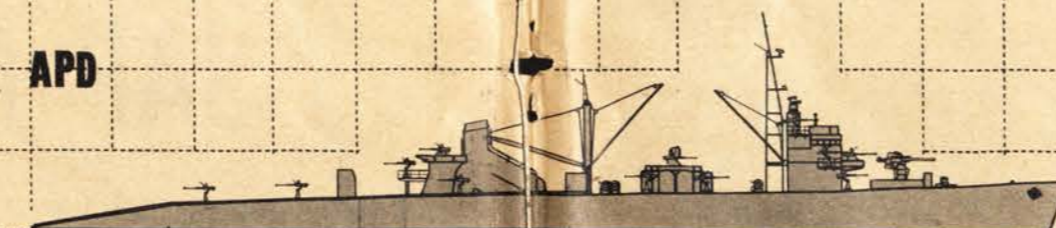
HATSUTAKA CLASS

CMc



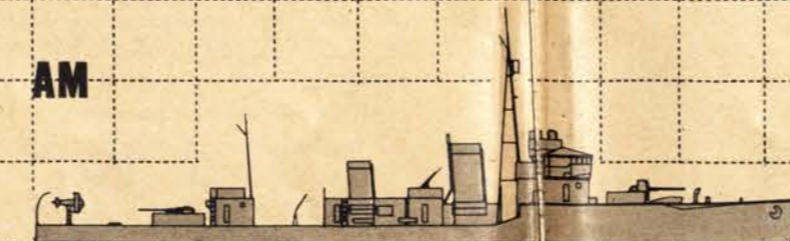
TOSHIMA CLASS

APD

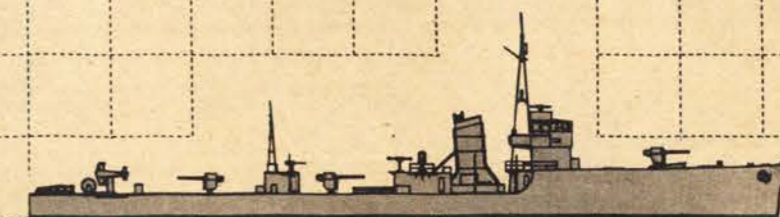


APD

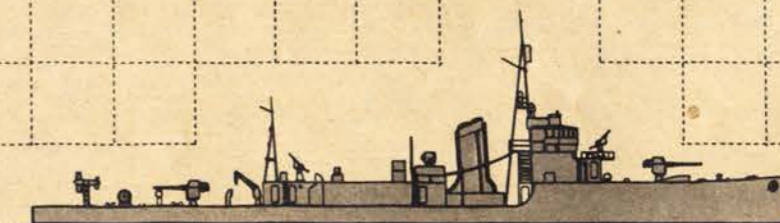
AM



AM 1 CLASS

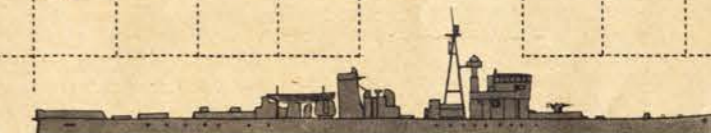


AM 7 CLASS



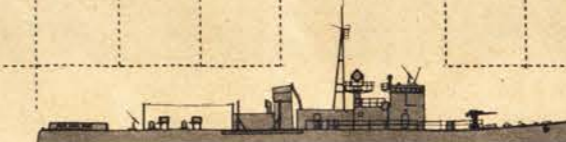
AM 13 CLASS

PC



PC 1 CLASS

PC



PC 13 CLASS

SCS



SCS 1 CLASS

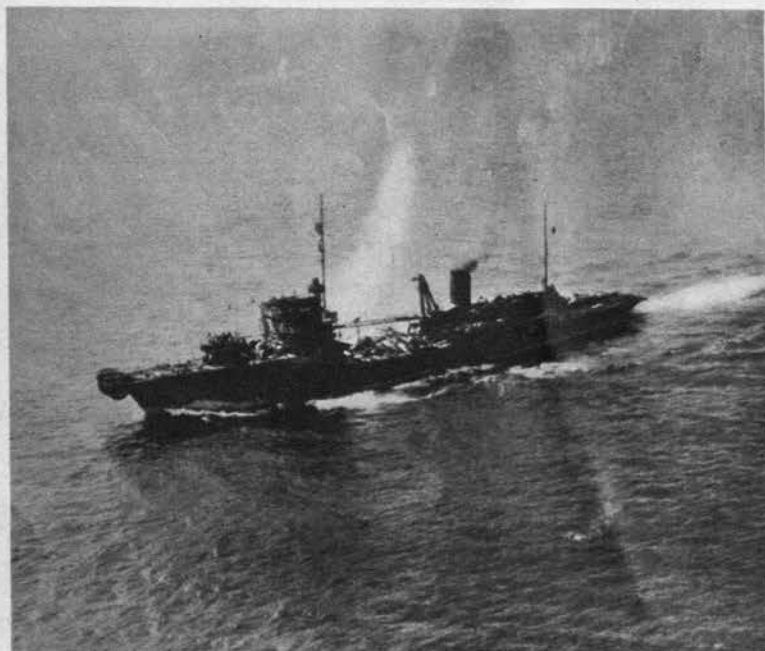


SCS 251 CLASS



Dormant convoy in Hong Kong harbor takes a drubbing from the air. Two DE UN-1's (*foreground and right*) are throwing up flak from

bridge gun positions (note smoke). DE UN-1 has stack aft, separated from bridge by wide break. Depth charge racks square off stern.



Cable sheaves add heavy lip to bow of Jap cablelayer (ARC). Well deck separates square bridge from tripod kingpost and stack set aft.

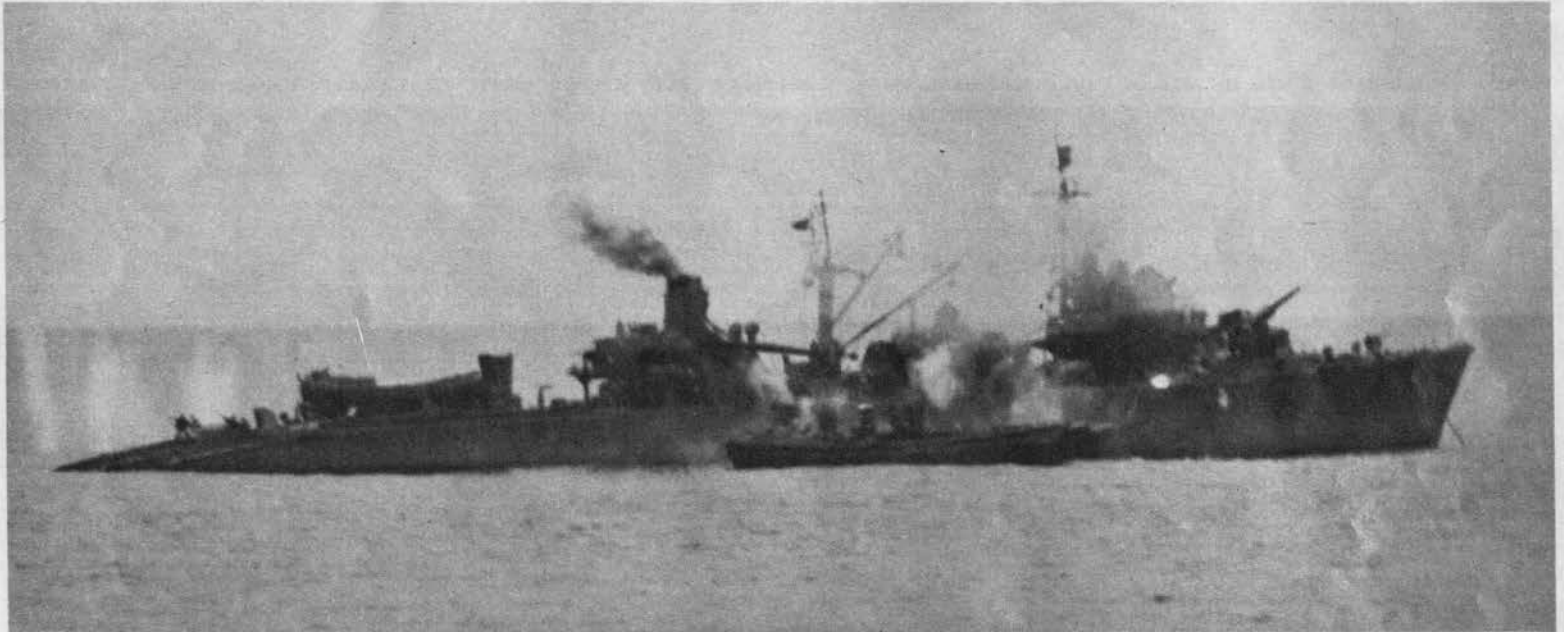


Coastal minelayer, probably of Sokuten Class, has parallel stern racks. Simple bridge, forecandle deck, mainmast make design typically Jap.



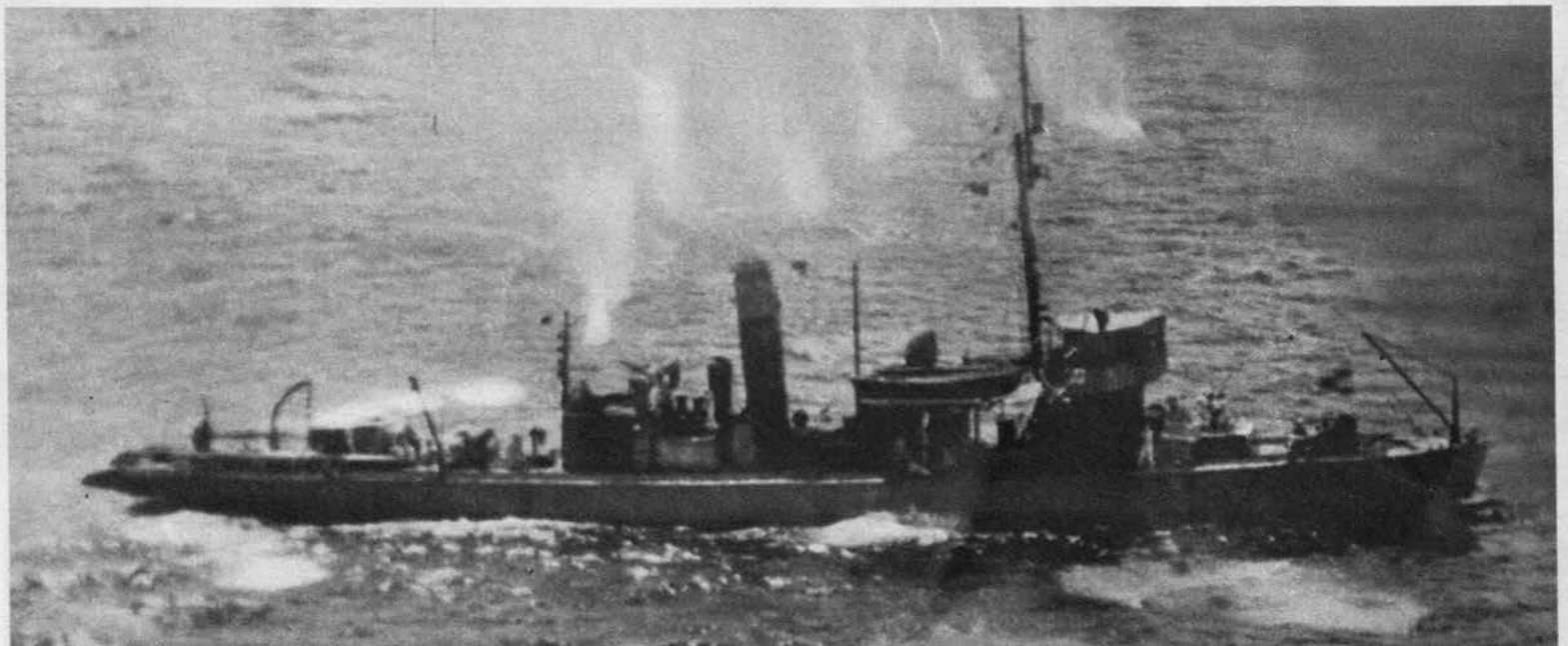
Sinking by the stern, Chidori-Otori TB still displays its low profile. Weight of ship (trunked stack, elementary bridge) is pushed forward,

afterdeck is long and even except for gun, torpedo mounts. Tripod masts characterize rig of most Jap warships including minor vessels.



Ugly and unusual in profile, Jap APB launches troop-laden landing craft down its sloping stern. Heavy kingpost is for retrieving the land-

ing barges, several of which can be seen waiting alongside or already on deck. Heavily trunked stack rises from afterdeck behind kingpost.



Tall pipe stack dominates ramshackle appearance of Toshima Class coastal minelayers. Old and small, Toshimas can be used on short-haul

escort missions with mines replaced by depth charges. Sharply extended stern, mine tracks help distinguish them from steam trawlers.



Mikura Class patrol frigate has a chunky, well-developed superstructure. Mainmast found on most small Jap ships is prominent on Mikura.



Most important PF is new Kaibokan 1, now being seen in numbers. Stack aft, straight raked bow, shielded forward gun are typically Jap.



Stack forward and 40 ft. more length distinguish Kaibokan 2 (above) from Kaibokan 1. Otherwise, the two classes are very similar in design.

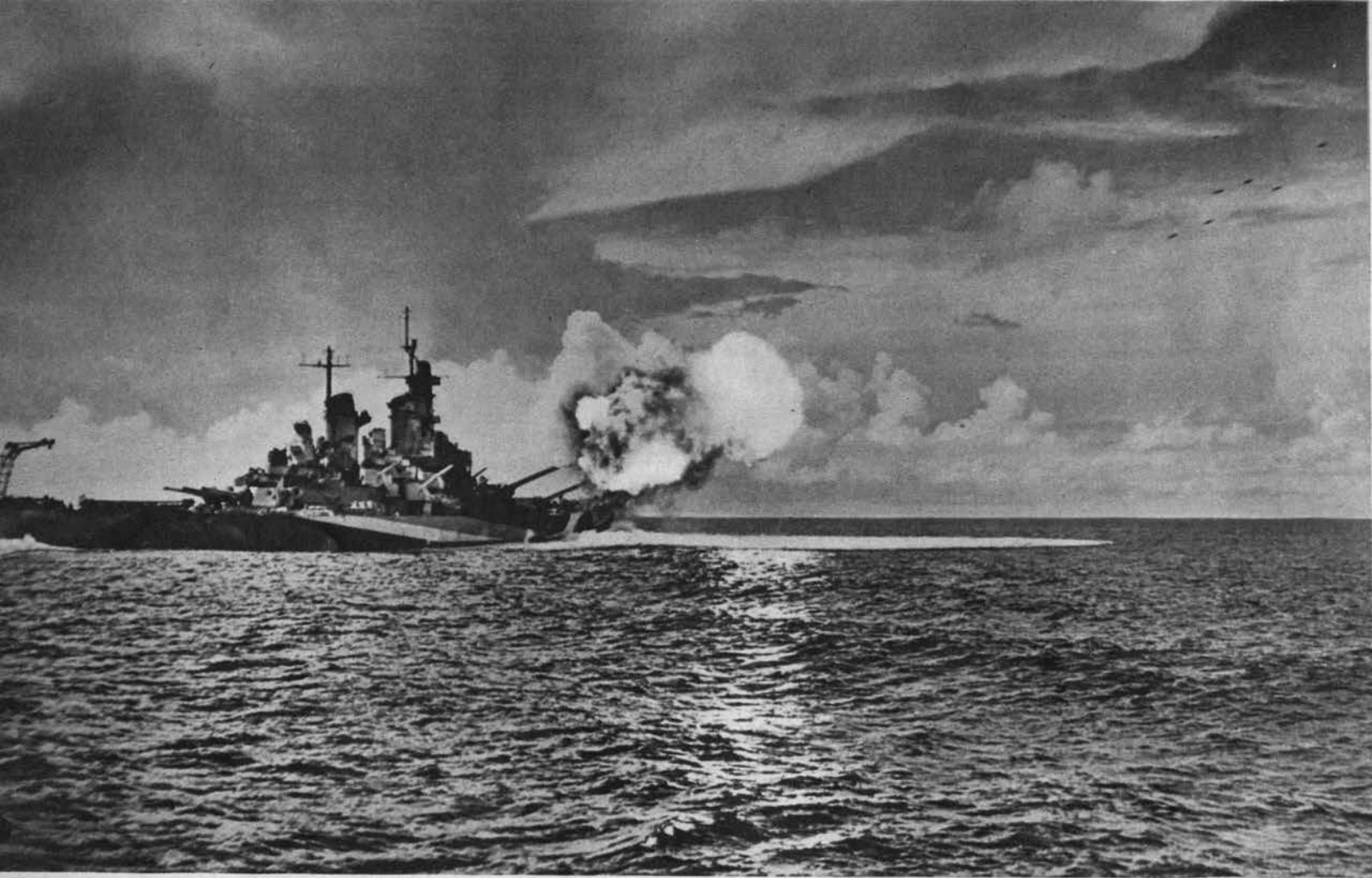


Kaibokan 2 hull has a flat taper aft to squarish stern. Depth charge equipment is prominent aft. Kaibokan is Jap word for escort vessel.

FORMOSAN ANCHORAGE HOLDS HUDDLE OF CARGO SHIPS AND ESCORTS. SMALLER CRAFT WITH SUPERSTRUCTURE GATHERED AMIDSHIPS (NOTE UNIT

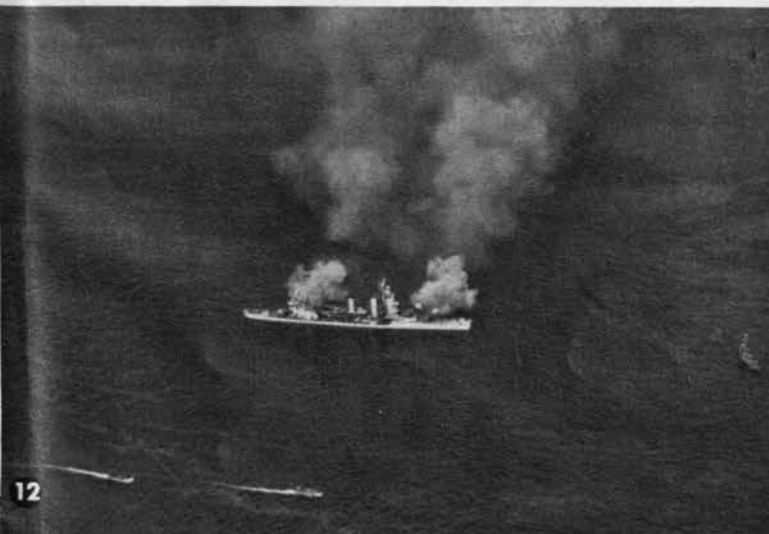
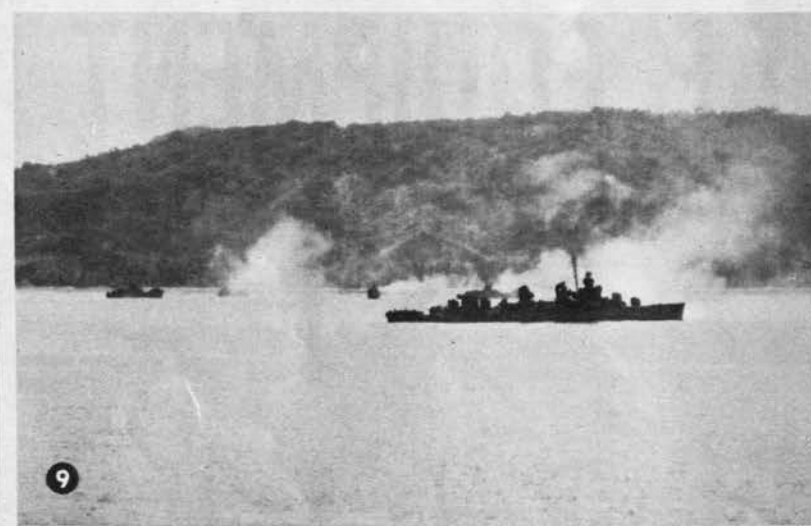
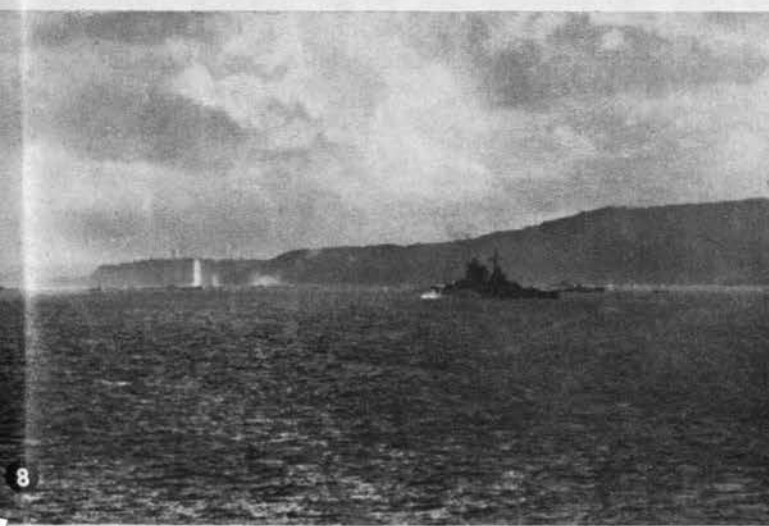
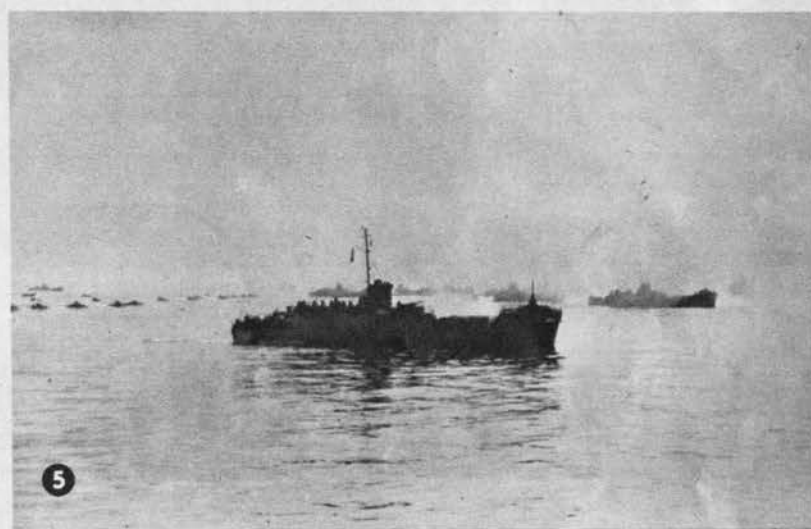
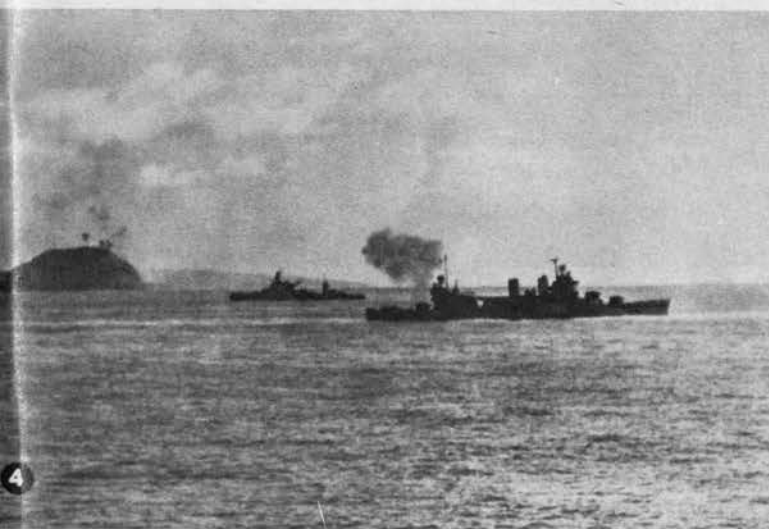
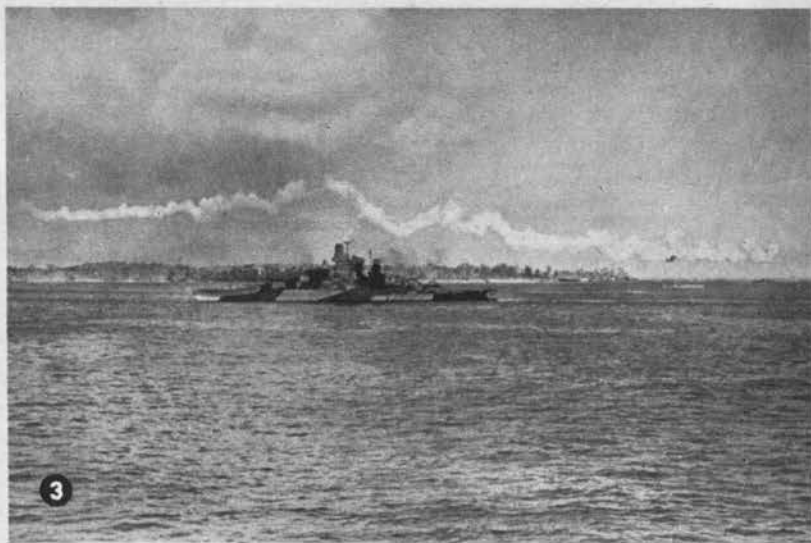
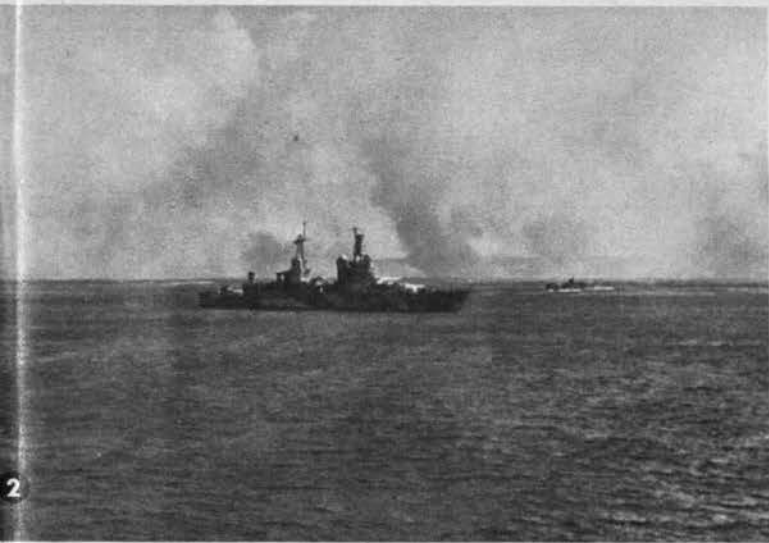
TRAILING OIL SLICK) ARE PC-13'S. OTHERS ARE MAINLY KAIBOKAN 1'S (SUPERSTRUCTURE BREAK AMIDSHIPS) OR KAIBOKAN 2'S (STACK FORWARD)





QUIZ NO. 3: SHIP-TO-SHORE BOMBARDMENT





For answers see p. 48



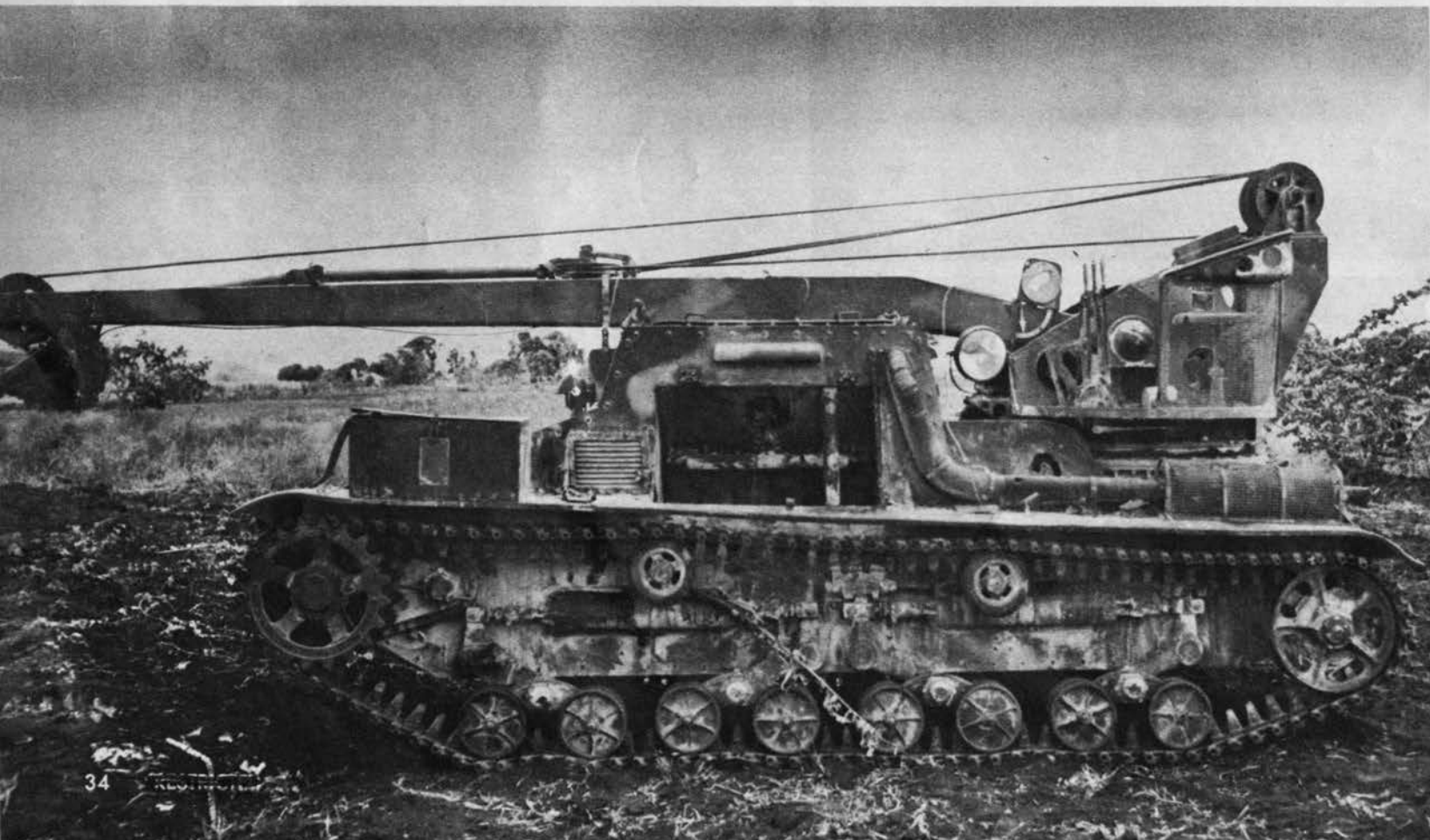
ARMORED PRIME MOVER ON POSSIBLE TANKETTE CHASSIS CARRIES MEN AND SUPPLIES IN THE REAR. SIDE PORTS ARE FOR SMALL ARMS WEAPONS

MISCELLANEOUS JAP EQUIPMENT

As the war in the Pacific moves to larger land areas, the chain of transportation and supply comes to depend more heavily on the efficiency of specialized armored transportation equipment. Shown above and on the following pages are pictures of some of the vehicles designed by the enemy to supply land transport for his armies. Called prime movers, they are used to tow artillery and to carry ammunition and personnel to front-line areas. Their job demands great cross-country ability, high standards of speed and mobility.

These prime movers haul 105- and 150-mm. howitzers and the

A JAP TANK RECOVERY VEHICLE TAKEN ON SAIPAN WEIGHS NINE TONS, CAN HAUL TWELVE-TON TANKS. EIGHT-WHEEL SUSPENSION IS UNIQUE





SIX-TON PRIME MOVER, TYPE 98 (1938) IS USED BY JAP ARMY TO TOW HEAVY ARTILLERY, CARRY AMMUNITION. IT DOUBLES IN RECONNAISSANCE DUTY

105-mm. field gun as well as lighter artillery, personnel and ammunition. They can also be used for reconnaissance. Top speed of these vehicles is 28 m.p.h.; highest angle of climb is 30 degrees. They carry no heavy armament and are usually employed with tank companies which protect them from strafing attacks.

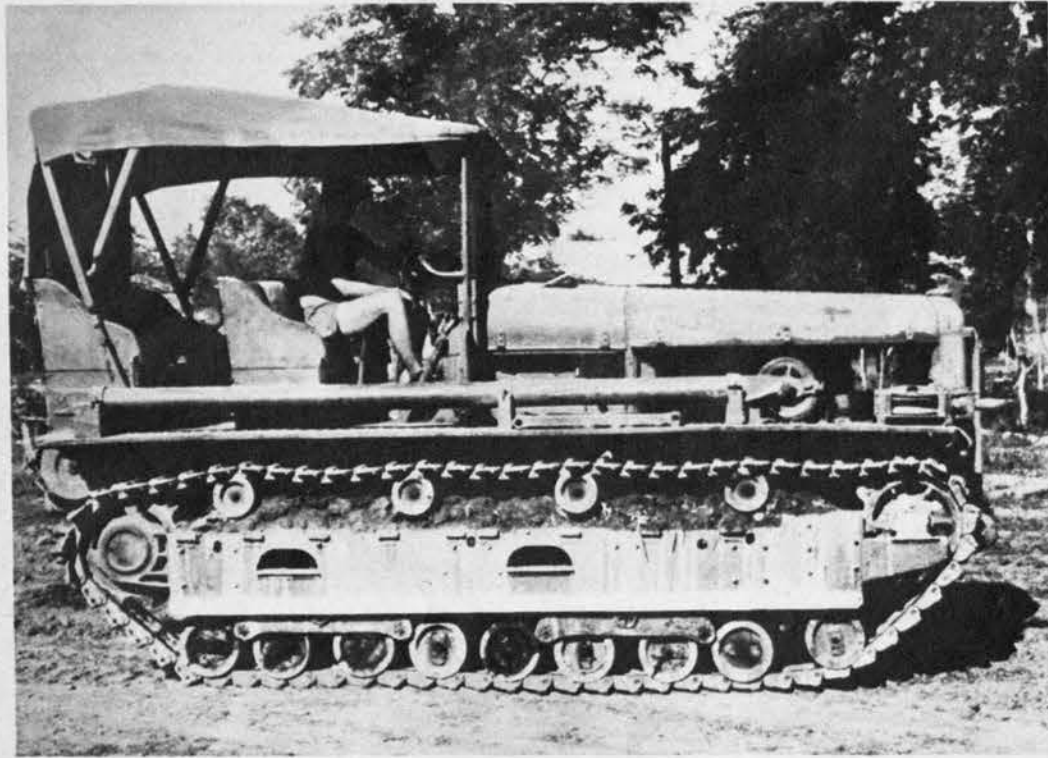
Performance statistics show these Jap vehicles to be inferior to U. S. models not only in load but in speed, grade-ascending ability and fuel capacity. Nevertheless they will be met in combat and should be recognized by our forces.

Two additions to Jap equipment are the tank recovery vehicle and

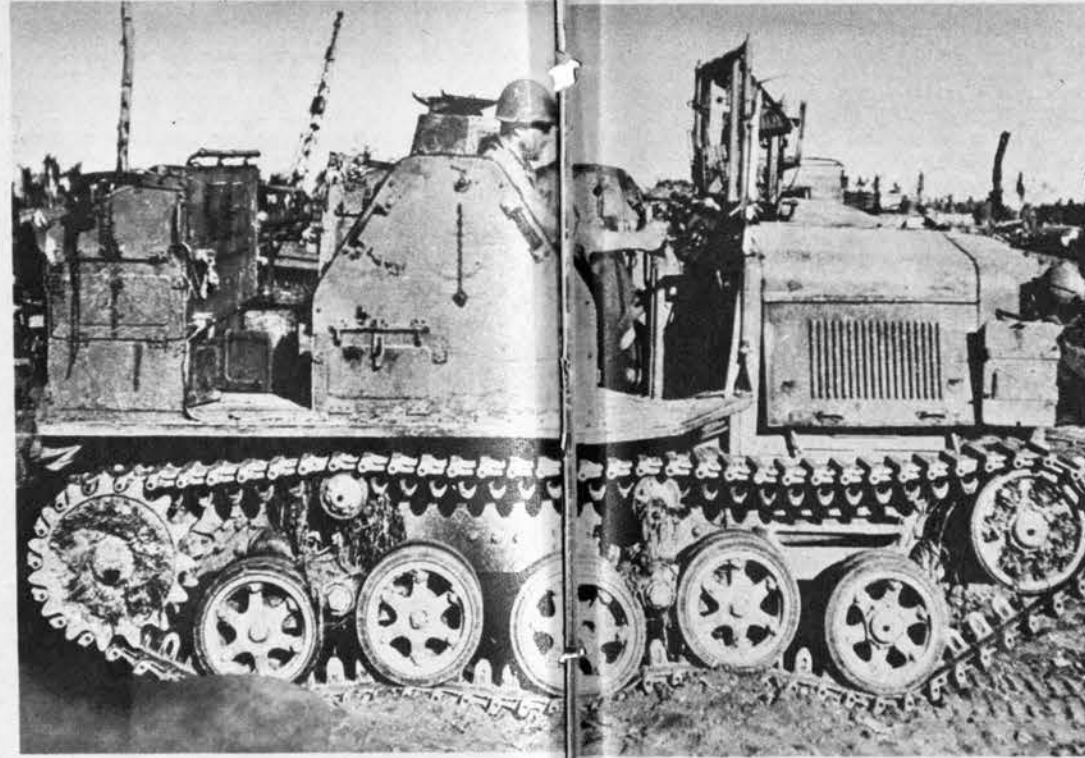
armored car shown at bottom of page. The recovery vehicle has a suspension consisting of eight bogies mounted in pairs, two return rollers. This Jap vehicle can tow only tankettes and light tanks, cannot haul the smallest (13-ton) medium. The armored car has been converted from a Ford truck to serve as a personnel and general cargo carrier. It is rubber-tired, lightly armored, probably carries one or more machine guns and a crew of four to six men. Since the vehicle is an improvised one, no type designation is known. The distinctive marking on the side armor plate shows that it is assigned to a field motor transport depot.

ARMORED CAR HAS BEEN CONVERTED FROM ONE-AND-A-HALF TON FORD TRUCK BY THE JAPS. IT WAS RECOVERED IN NORTHWEST PACIFIC AREA



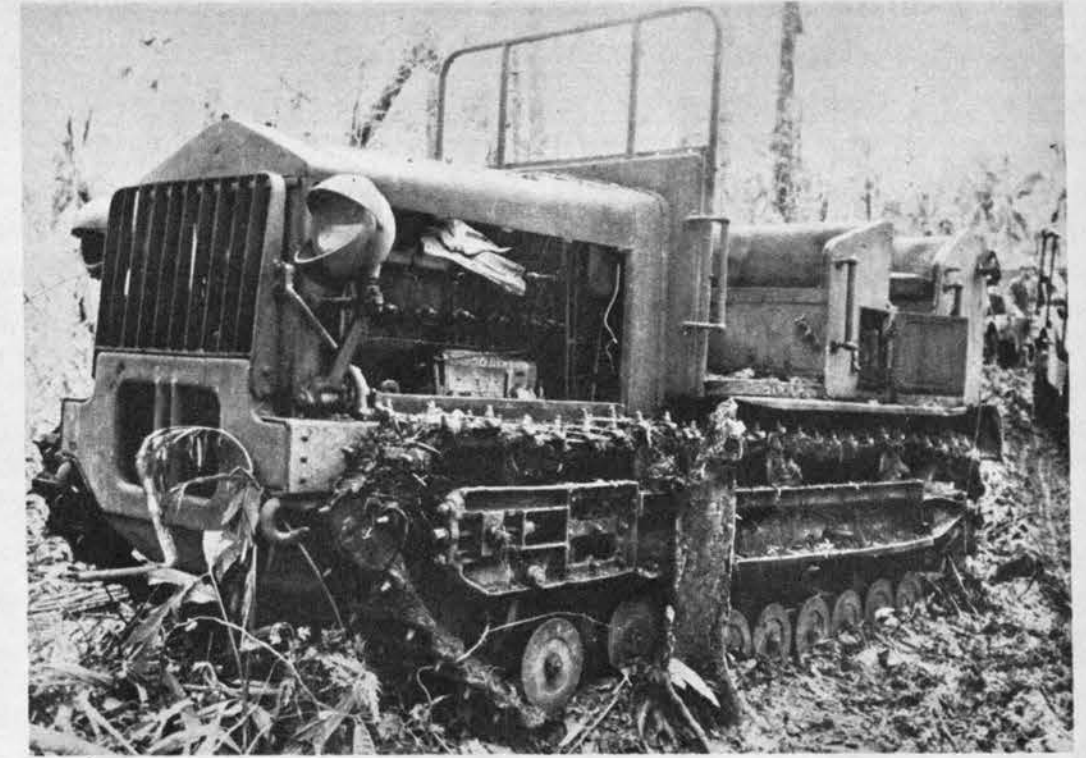


Prime mover 95A has some suspension characteristics of 89A medium tank, oldest operational Jap model. Trailer load capacity is 32 tons. Nine-bogie suspension is partially covered by skirting.

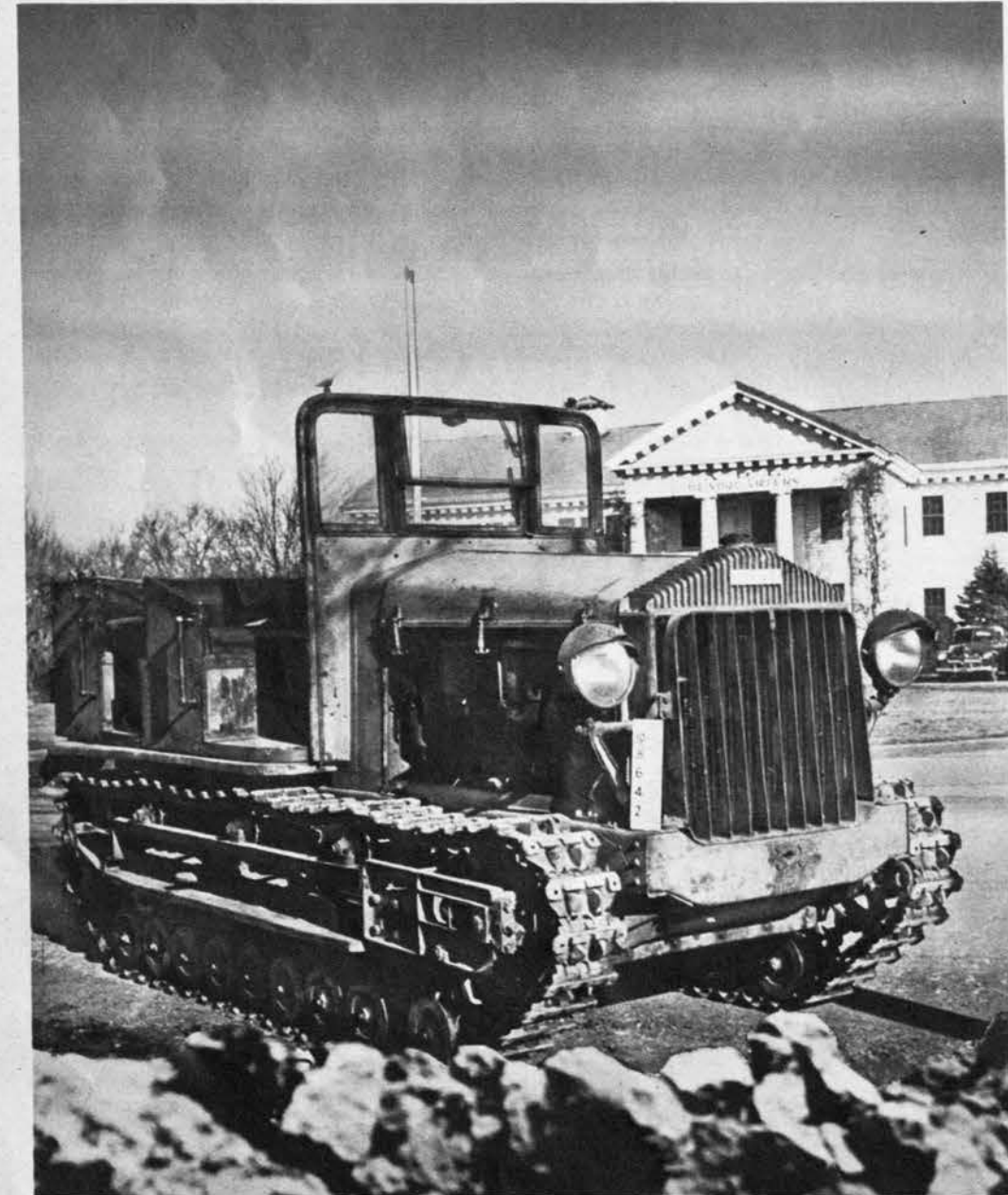


Choppy, broken body distinguishes prime movers of the tractor type. This vehicle, probably

a Type 98, may be seen more frequently, has recent modifications of newer Jap suspension.



Heavy artillery tractor Type 92B (eight-ton) has the same outlines as the smaller five-ton tractor (below left). The body of the vehicle sits high above the chassis, leaving the personnel exposed.



Commercial tractor design is apparent in the compact silhouette of this five-ton mover Type 92A. Like the 13-ton Type 95A (above) it has nine bogie wheels, but only three return rollers.



FIVE-TON PRIME MOVER 92B IS SHOWN

TOWING JAP 150-MM. HOWITZER. TOP SPEED IS 18 M.P.H.; LOAD IS FIVE TONS. AS ON ALL JAP PRIME MOVERS, SMALL FUEL CAPACITY LIMITS RANGE

JAP VS. U. S. II

FOLLOWING LAST MONTH'S CHART, IN WHICH U.S. AND JAPANESE COMBAT PLANES WERE CONTRASTED AS SEEN HEAD-ON, THE JOURNAL THIS MONTH IS PRESENTING THE SAME AIRCRAFT

SINGLE-ENGINE JAP

SYMMETRICAL WINGS, WITH NEARLY EVEN TAPER ON THE LEADING AND TRAILING EDGES, CHARACTERIZE MOST OF JAPAN'S SINGLE-ENGINE PLANES. TRIANGULAR TAILPLANES SOMETIMES SIT FORWARD OF FIN AND RUDDER.

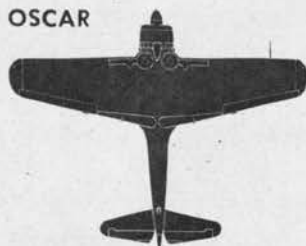
ZEKE



FRANK



OSCAR



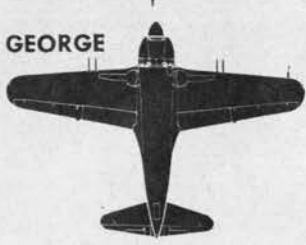
TOJO



JACK



GEORGE



MYRT



JILL



TONY



JUDY 11



JUDY 33



GRACE



TWIN-ENGINE JAP

JAP TWIN-ENGINE PLANES HAVE A TENDENCY TO BUNCH ENGINES AND NOSE, LEAVING A LONG, SLIM FUSELAGE BETWEEN WING AND TRIANGULAR TAILPLANE. NACELLES PRACTICALLY NEVER BREAK WING'S TRAILING EDGE.

NICK



IRVING



DINAH



LILY



FRANCES



SALLY



BETTY



PEGGY



HELEN



IN PLAN VIEW. AS PREVIOUSLY STATED, THESE CHARTS POINT OUT GENERAL NATIONAL DIFFERENCES, THEREBY FURNISH A SUPPLEMENTAL AID TO UNDERSTANDING OUR OWN AND ENEMY'S

AIRPLANES. THEY DO NOT, HOWEVER, CONSTITUTE A NEW SYSTEM OF RECOGNITION. THIS SERIES OF DIAGRAMS WILL CONCLUDE WITH A BEAM-VIEW CHART IN NEXT MONTH'S JOURNAL.

SINGLE-ENGINE U. S.

U.S. SINGLE-ENGINE PLANES ARE MORE ANGULAR AND LESS GRACEFUL THAN THEIR JAPANESE COUNTERPARTS. THE TAILPLANE BITE FOUND ON SEVERAL U.S. PLANES IS MORE PROMINENT THAN ANY ON THE JAPANESE.

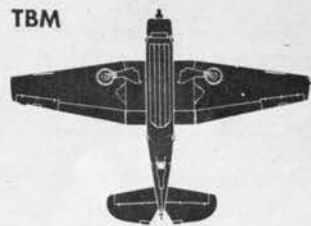
FM-2



F6F



TBM



P-47N



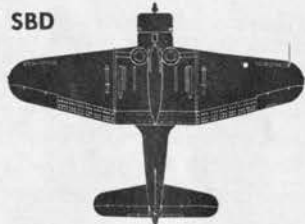
SB2C



P-40



SBD



F4U



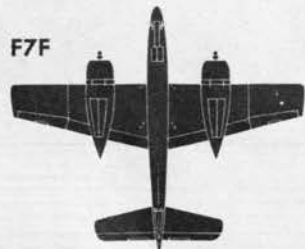
P-51



TWIN-ENGINE U. S.

SIX U.S. TWIN-ENGINE PLANES HAVE TWIN BOOMS OR LONG, POINTED NACELLES WHICH PROTRUDE FAR BEHIND TRAILING EDGE. THOUGH PV'S HAVE SHORT NACELLES, THEIR TAILPLANES ARE MORE RECTANGULAR THAN JAPS'.

F7F



A-20



P-38



B-25



A-26



P-61



PV-1



PV-2





Tokyo-razing B-29's of the 21st Bomber Command range out over the Pacific (*above*). Long, tubular fuselage, a narrow wing and the soaring fin's graceful curve help to identify the huge Superfortresses.

Fighter mainstays of the AAF fly wing-to-wing over Saipan (*below*). The P-47's gave close support during Saipan fighting; P-38's helped soften up Iwo Jima; P-51's were first Army fighters to reach Honshu.



USAAF

SEVEN AIR FORCES CARRY THE FIGHT TO JAPAN

It is now three and a half years since Japanese bombers roared over Hickam Field and Clark Field, temporarily crippling the U. S. Army's air strength in the Pacific. So complete was the destruction that all through Bataan, Corregidor and the Netherlands East Indies, Allied ground forces fought without air-ground cooperation. Not until the fall of 1942, and then only over Papua, could the Allies claim air superiority, and even this was gained through smart tactics rather than through equality in numbers.

Today, however, there is no section of the Pacific where U. S. air power is seriously challenged. With cooperation from a daring Navy and hard-slugging soldiers and marines in overcoming their greatest single enemy—distance—U. S. Army airmen can now reach almost every square mile of Japanese-held territory. Seven air forces, the 5th, 7th, 10th, 11th, 13th, 14th and 20th, sweep at will over the entire Pacific and are stabbing deep into China, the Netherlands East Indies and the Malay Peninsula. Since last October, Superforts of the 20th AF's 21st Bomber Command have been blasting and burning Japan's greatest cities in missions which now equal in total bomb weight the heaviest carried out over Europe.

It took more than superior productive capacity to accomplish this startling reversal. Bases had to be conquered by the slow process of aerial bombing, by naval action, amphibious assault and bitter ground fighting. U. S. and Australian aviation engineers had to hack airstrips out of New Guinea jungle, and at Chengtu, Chinese coolies literally beat a runway together out of hand-crushed rock. Supply lines were incredibly long. Chinese bases until the opening of the Stilwell Road had to be supplied by air transport out of India after supplies had been hauled over 15,000 miles by sea to Calcutta. Equipment had to be improvised on the spot to supplement depleted, outdated matériel available in the Far East.

In a sense, this need for improvisation turned out to be a blessing in disguise: the Pacific and Asiatic theaters became a vast proving ground. Maj. General Claire L. Chennault developed the two-plane element as the standard fighter tactic and by forbidding dogfighting, limiting dives to a single pass and by urging economy of ammunition, he made the P-40 into an effective weapon against Zekes. Airborne operations were first worked out by troop carrier units in New Guinea and the First Air Commando Group in Burma. Mini-

mum altitude bombing as developed in New Guinea was one of the major contributions to the destruction of Japanese merchant fleets in the Pacific. Fighter bombing as a tactic was almost entirely the result of the shortage of divebombers in Asia which required the transformation of the P-40 into a divebomber. And in the jungles of the Far East, liaison planes became more than just artillery observation types. They became medical and jungle rescue planes.

Four great areas had to be blanketed by U. S. air, sea and ground forces before they could reach the source of the enemy's power. These were the Alaska-Aleutian-Kurile stretch, the Southwest Pacific, China-Burma-India and the Central Pacific. In all but Alaska, the AAF had to bounce back from bad beatings, and even there only a desperate defense of Dutch Harbor caused the Japs to turn back.

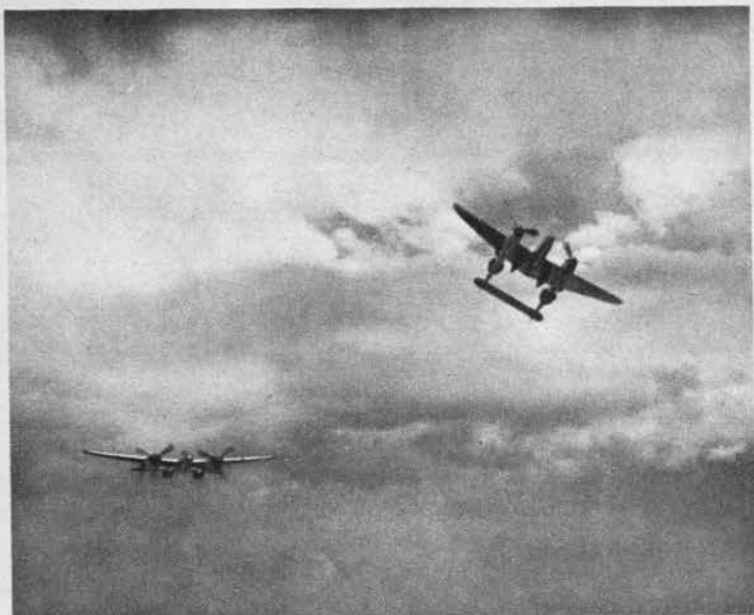
Foreseeing the possibility that the enemy might try to gain a foothold in the bleak but vital Aleutians, during the winter of 1941-1942 the 11th Air Force built bases on Umnak and Cold Bay flanking Dutch Harbor. Thus when the Japanese carriers struck simultaneously with their Midway assault, they met unexpected opposition. Instead of driving on to Alaska, they had to content themselves with Attu and Kiska from where they could divert U. S. planes and force Alaskan bases to maintain a continuous alert. First steps in the U. S. counterdrive were the unopposed landings on Adak and Amchitka. From these bases, the two Jap-held islands were pounded whenever weather permitted. Finally in May 1943, amphibious forces landed on Attu, then three months later occupied a surprisingly deserted Kiska. With airfields 770 miles from Paramushiru, the 11th could now divert Japanese planes, anti-

aircraft guns and crews to the Kuriles and simultaneously pick off enemy convoys in northern waters.

While the northern flank of the Pacific air offensive was being secured, the first aerial blows were being struck to protect Australia and retake the Philippines. With Japanese ground forces less than 30 miles from Port Moresby, Australia's remaining major base on New Guinea, the situation in the summer of 1942 was critical. When General Kenney first visited Moresby in July, the airfield was in use only intermittently because of the constant threat of Japanese strafing. Yet with his numerically inferior



Gen. George C. Kenney led 5th AF in the New Guinea campaign, now commands Philippine-based Far East Air Forces.



Tacloban's murky sky provides a backdrop for P-38's. Fuel tanks, which flank the gondola, are recognition clues in the head-on view.



Tenth Air Force Thunderbolts sweep over rugged terrain in Burma. This older faired-cockpit version is still seen in considerable quantity.



These B-25's bombed and strafed to clear the way for Col. Cochran's 1st Air Commando Group. The H model (*above*) has a 75-mm. cannon

and four forward-firing machine guns; the B-25J may have either a plexiglass bomber nose or a solid nose eight-gun strafing installation.

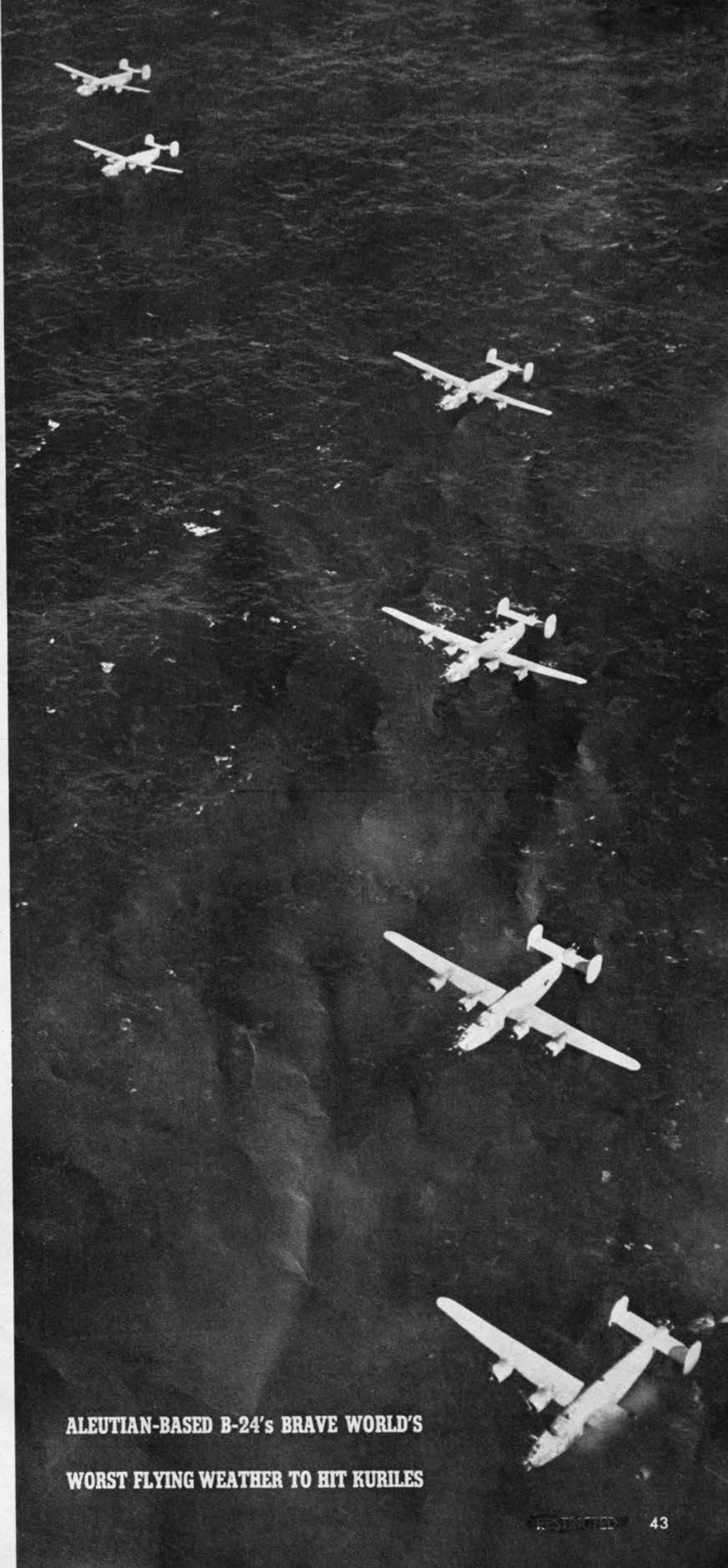
RAAF and U. S. 5th AF he began to wear down Japanese air power. By the end of the Papuan campaign, Allied fighters were protecting cargo planes as they supplied U. S. and Australian ground forces. The Kenney method of wrecking Jap planes was to hit their airdromes low, with forward-firing .50's sweeping AA defenses out of the way, with parafrags and delayed-action bombs blasting planes and hangars while the heavy bombers cratered the runways. Later known as "Wewaking," it was actually tried at Buna nearly a year before the great Wewak strike of August 1943 when 206 parked planes were destroyed.

In addition to smashing the enemy's planes, the 5th did a very efficient job of isolating the battlefield. Heavy bombers frequently hit shipping at distant bases, such as Rabaul, at night while every available plane hammered convoys off New Guinea by day. Thus 5th Air Force fliers helped to cut off enemy reinforcements headed for New Guinea and the Solomons. Two great actions climaxed the deadly minimum altitude attacks of the 5th. One was the Bismarck Sea slaughter in March 1943 when many thousands of Jap reinforcements drowned, and the other was in the Philippines more than a year and a half later when some 30,000 Japanese soldiers seeking to bolster besieged Leyte had their transports blasted out from under them by joint Army-Navy air blows. Today the 5th has been joined in the Philippines by the 13th Air Force, veterans of the Solomons, and the two now constitute the U. S. Army's Far East Air Forces, which are now lashing out at the Indies, Formosa and the South China coast, spearheading the advance northward to Japan, sinking shipping, wrecking oil installations, airfields and factories.

AAF in China

In March 1942 a handful of heavy bombers escaped to India under Maj. General (now Lieut. General) Brereton to sire the 10th Air Force, the India Air Task Force and, with Maj. General Chennault's famed Flying Tigers, the China Air Task Force. This China Air Task Force later became the 14th AF. The Flying Tigers gave tactical support to Chinese ground forces in Burma, while the 10th AF devoted its efforts to protecting the ATC's route over the "Hump". On the other side of the Himalayas, the 14th gave China her first effective air-ground co-operation. From its forward bases, subsequently abandoned to the Japanese, the 14th could strike at shipping and port facilities at Hong Kong and Formosa. For the moment, however, its job is largely tactical as it cooperates with the Chinese armies in their push to the sea.

Meanwhile, a new air force with a new



ALEUTIAN-BASED B-24's BRAVE WORLD'S

WORST FLYING WEATHER TO HIT KURILES



Veteran of Europe, the P-51 (*above*) bases on Iwo Jima for strikes against Japan. Angular in wing and tail, it has a curving back and belly line. Newest AAF fighter to reach the Pacific is the long-range P-47N (*below*). Note the squared-off wing and the long, low fin extension.



Ungainly but effective, the P-61 (*below*) is protecting our Pacific bases from Japanese night forays. Heavy gondola has three steps in front, comes to a point at the rear. The wing, which tapers only on the trailing edge, carries underslung engines and distinctive twin booms.



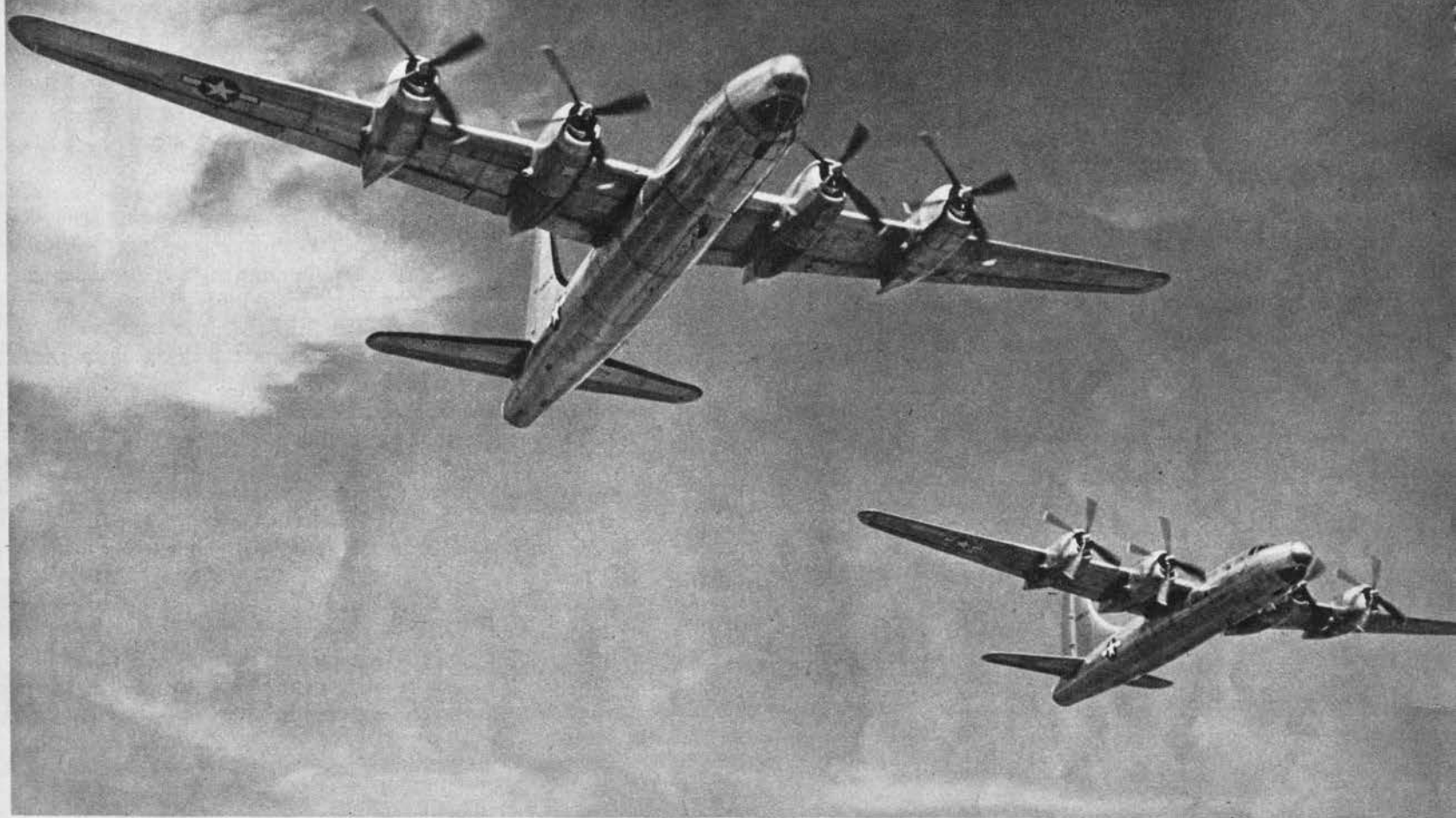
USAAF (continued)

weapon was preparing to bring the war to Japan itself. The air force was the 20th; the weapon was the B-29. On June 15, 1944 India-based planes of the 20th AF's 20th Bomber Command bombed coke ovens at the Kyushu city of Yawata. After several attacks on the Japanese steel industry at Yawata and at Anshan in Manchuria, the 20th attacked the Japanese aircraft industry and later helped neutralize Formosan airfields which might have fed fresh Jap fighters into the Philippines. When it became evident that the Marianas-based Superforts of the 21st Bomber Command could hit Japan more easily than those of the 20th, the latter shifted their attention to Singapore and the East Indies. Now, along with the 10th AF, the 20th Bomber Command has left India as part of the program to turn that theater over to the Royal Air Force.

The 29's Strike

Like the 20th Bomber Command, the 21st was to have struck its first blows from China. However, the breakthrough in the Central Pacific gave it a more desirable home station in the Marianas. This breakthrough was primarily a display of great naval skill and power, but it entailed softening up by bombers of the Army's 7th Air Force, organized out of the wreckage at Hickam Field. Except for the Battle of Midway and an occasional raid on Wake, the 7th was not a fighting force until September 1943. At that time it was moved to the Allied-held Ellice Islands to flank and bombard Tarawa and Makin in the Gilberts. These in turn provided bases for a similar treatment of the Marshalls, and when Kwajalein and Eniwetok were captured early in 1944, the 7th moved one step nearer Japan.

From the Marshalls, the Carolines (including Truk) could be attacked, while from bases in the Palaus, the 7th's heavy bombers bombed Leyte. But instead of joining the 5th and 13th in the Philippines, the 7th moved into Saipan where its fighters could smash at the northern Marianas and escort bombers to Iwo Jima. It is from Iwo and Okinawa that the 7th Fighter Command, in coordinated blows with rapidly growing AAF forces, with the Marines' air arm and with the powerful carrier strikes of the Navy, can best "Wewak" the Kamikaze nests (*see page 3*) and the defenders of Honshu and Kyushu. Rocket-firing P-51D's and P-47N's have already flayed air bases on Japan's home islands. Together with P-61 night-fighters, they have helped to secure the B-29 bases in the Marianas from Japanese aerial assaults. The stage is now set: P-38, P-47, P-51, P-61, A-26, B-17, B-24, B-25, B-29 and the new B-32 are ready to take the U. S. air effort to its last target of this war.



Burly B-32's (*above*) are expected to reinforce our strategic bombardment forces during the late summer. The fuselage is thicker and shorter than B-29. Tail is unusually tall, thin Davis wing is mounted high.

Long, lean A-26 Invader (*below*) supplements B-25 as a medium bomber and attack plane. Tall, upswept tail, slanting tailplane and angular lines typify the latest features of U.S. twin-engine airplane design.




LOOKING DOWN ON JAPAN'S CARRIERS


Reconnaissance photographs taken during the past year show the progress of new Japanese carrier designs from the launching ways to completion. Shown on these pages are the latest pictures in the series: striking plan views of the Unryu Class fleet carriers, a new CVL and a new CVE.

Although it is probable that Japan can never again offer a serious challenge to U. S. carrier strength, these new units are significant in size and number. Most important are the 743-foot Unryu's, three of which are completed or fitting out. This new backbone for the Japanese fleet is supplemented by a group of merchant-hull CVE's. One of these escort carriers is operational and seems to be intended for convoy duty rather than fleet support. Within the last month, an unidentified light carrier has been spotted for the first time in Sasebo harbor.

Study of the recent overhead views on these pages shows that the new carriers follow Japanese tradition in their design. Their flight decks are long and narrow and usually chopped off short of the bow. If they exist at all, their islands are small and located well forward, leaning outboard from beneath the flight deck.



Unidentified CVL has a very angular flight deck, some 675 feet long. Fantail is angular and bow tapers in the fashion of older Jap carriers.



Deck plan of Hayataka (above) is blurred by cobweb of camouflage. Unryu Class CV (below) has twin stacks projecting on starboard side.



Two Unryu Class CV's are grafted onto an island by nets and deck camouflage. Nets on lower carrier are supported by mass of sampans.



Attacked at Kobe, new Jap escort carrier (*right*) was hit near the bow. Built on large merchant hulls, recent Japanese CVE's have rectangular

flight decks, indented but not tapered. Outline of flight deck is beaded with gun tubs. Merchant ship at left of stricken carrier is Fox Able.

QUIZ ANSWERS

QUIZ NO. 1

1. Spitfires
2. P-51D
3. P-38
4. Zeke
5. Frances
6. Beaufighter
7. Nick
8. F4F
9. P-47B

QUIZ NO. 2

1. L to R: LVT(A)(4); U. S. M-3A1 chassis with 75-mm. how.; LVT(A)(1); U. S. M-8; LVT(A)(4); LVT(A)(1)
2. British Churchill
3. British Churchill with "Petard"
4. U.S. M-7 how. motor carriage
5. British Challenger
6. Japanese Model 2 amphibious tank
7. U.S. tank recovery vehicle M-32 towing Japanese Model 95 light tank
8. U.S. M-10 gun motor carriage
9. L to R: Japanese Model 97 medium tank with 47-mm. gun; U.S. M-4A3 medium tank
10. U.S. M-10 gun motor carriage

QUIZ NO. 3

1. Iowa Class BB
2. L to R: Portland Class CA; LCI
3. Tennessee Class BB
4. L to R: Arkansas BB; New Orleans Class CA
5. LCI's
6. Wichita CA
7. Farragut Class DD
8. New Mexico Class BB
9. LCI's and Fletcher Class DD
10. L to R: DD; Pennsylvania BB
11. L to R: APD; Fletcher Class DD (2)
12. New Orleans Class CA
13. Tennessee Class BB

QUIZ NO. 4

1. L to R: "V" to "W"—Wairs Class DD, Hunt Class DE; merchant ship; sloop (extreme right)
2. Kent-Devonshire Class CA
3. Leander Class CL
4. "J" to "Z" Group DD
5. L to R: Illustrious Class CV (2); King George V Class BB
6. Battler Class CVE's
7. Indomitable CV

QUIZ NO. 5

1. B-32
2. Dinah
3. F7F
4. Mosquito
5. Rex
6. Nick
7. B-17
8. Frank
9. Betty
10. Norm
11. George
12. Peggy
13. L-5
14. Lincoln
15. Helen



Among the ships attacked by the suicidal Japanese Kamikaze corps in the waters off Okinawa was this big U.S. warship. An alert Navy cameraman caught the attacking Zeke as it swooped in towards the port antiaircraft batteries and plunged to its own destruction close aboard.

CREDITS

The pictures used in the *Journal* came from the Allied Armed Services and are RESTRICTED, except for those listed below which are from private sources and are therefore unclassified.

- Cover—U.S. Navy photo from Acme telephoto
2—Fourth row right, Frank Scherschel
6—Top right, Harris and Ewing; bottom left, International
24—Top, International; second row left, British Official photo from Acme; second row right, International; fourth row left, Acme
41—Bottom, Harris and Ewing
42—Top right, Acme
43—Dmitri Kessel
45—Top, Consolidated Vultee Aircraft

NEWS & MISCELLANY



Dinah 3, the latest version of this standard Jap recon plane, has a new nose. A rounded and

faired plexiglass greenhouse gives the plane an unbroken dorsal line from nose to tail.

NEWS

Battle Class DD's, now being built for the Royal Navy, are the largest modern British destroyers ever designed. They are 379 ft. in length, displace 2,325 tons (standard). Except for armament arrangement, the Battles resemble the "L" and "M" classes, yet have a high freeboard like the Tribals. The entire main battery, four 4.5-in. dual-purpose guns in twin mounts, is concentrated forward. Names of Battle Class ships are now being changed and will begin with "D."

Two Colossus Class ships (see p. 12) will serve the British as aircraft maintenance vessels rather than as light fleet carriers. The two conversions will not be able to land or launch aircraft. A 15-ton crane is to be installed on the port bow, and deckhouses will be added on the inboard side of the island and near the stern, all at flight deck level. The bridge has been simplified and sponsons will be omitted along the sides.

Shimakaze, reported to be the fastest fleet destroyer class in the Japanese navy, is designed for a full speed of over 37 knots. Its length is believed to be approximately 410 ft.

Unryu Class CV's have bows similar to those on older Japanese light cruisers rather than the clipper bows of other Jap carrier classes.

B-32 will be used only in limited numbers in the Pacific. It should be listed in Class B rather than in Class A on the training list in the June *Journal*.

P-80, new USAAF jet fighter, may carry fuel tanks under the wingtips instead of under the wing's inner portions. This unusual ar-

angement cuts tank drag and prevents wing-tip stall at low speeds.

New Jap plane encountered by B-29's is probably the army fighter Ki 102, and not the navy Luke, as originally thought. Ki 102 is a twin-engine, twin-boom plane with a span of about 51 ft. and a length of about 37 ft. Although Luke may be operational in limited numbers, it is believed to be a single engine, pusher type plane.

George is probably planned for use as a carrier-based plane. It is reported that the carrier version has shortened landing gear and the low wings, which do not fold, have more dihedral than on previously known models.

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Twin-boom transport Buzzard, shown with and without engines (left and right), may

be glider patterned after German Go 242 and 244. Gondola is dwarfed by long, tapered wing.

PILOTED BOMB

JAPAN



DISTINGUISHING FEATURES: Baka is a rocket-powered glider bomb which is launched from parent aircraft against Allied targets, primarily shipping. It is a low mid-wing monoplane with twin fins and rudders. Its fuselage is torpedo-shaped, and is topped by a prominent plexiglass canopy set well aft. The stubby wing, which has moderate dihedral from the roots, has about three feet less span than Baka's overall length. Clipped wingtips, rectangular tailplane and square fins

and rudders are indications of economy in construction. **INTEREST:** The word "Baka" in Japanese means "fool," an appropriate name for this weapon whose pilot is inevitably blown up as the warhead hits. Baka has been attached to Betty (*above*) but could also be carried by Peggy, Helen, Liz or Rita. Its maximum range under rocket power is from three to five miles. But, if released from the parent plane's service ceiling, it can go as far as 50 miles by gliding most of the way.

JUNE 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1

BAKA



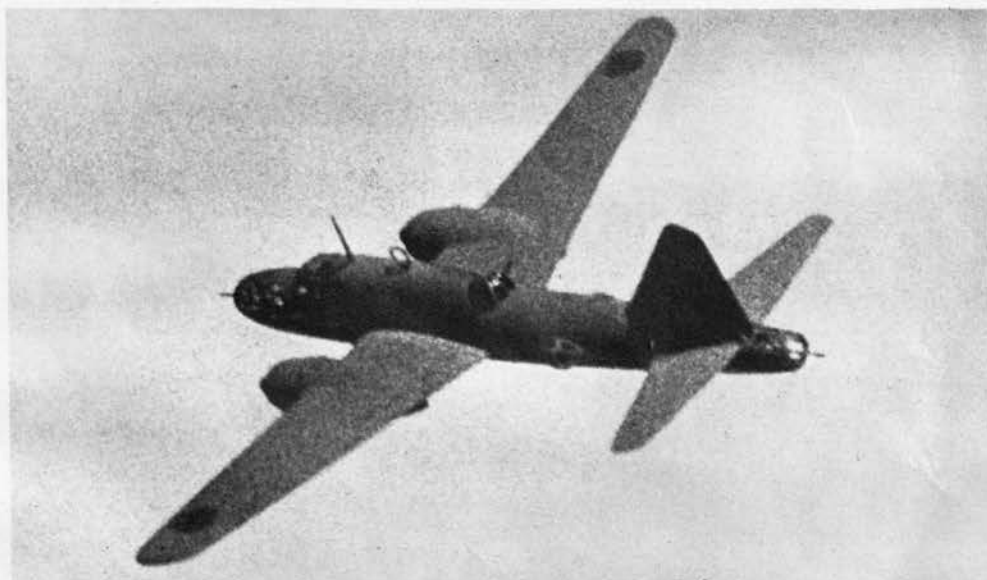
SPAN: 16 ft., 5 in.
LENGTH: 19 ft., 10 in.
APPROX. MAX. SPEED: 500 m.p.h. (level flight)
RELEASE ALTITUDE: probably not over 20,000 ft.

RESTRICTED

NOTE. This page is to be cut along dotted lines (*above and below*), added to the proper nation's section in the Recognition Pictorial Manual. The dots indicate perforations.

BOMBER

JAPAN



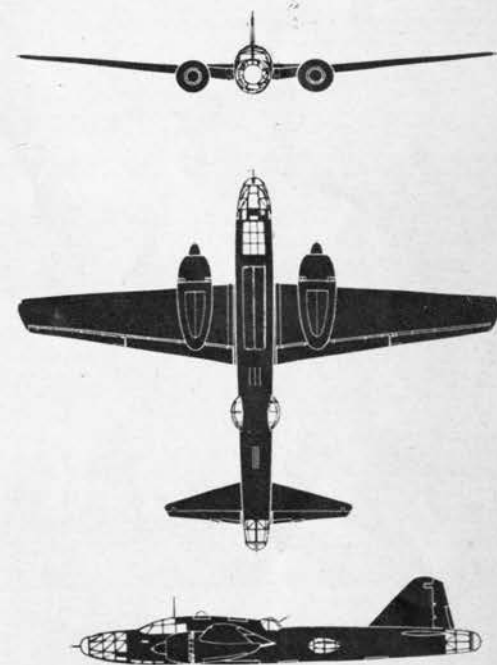
DISTINGUISHING FEATURES: A new Jap army bomber and torpedo plane, Peggy is a twin-engine, mid-wing monoplane with a single fin and rudder. Reminiscent of Betty, this new aircraft has a thick rounded fuselage, broken only by a long greenhouse and waist blisters. Fin and rudder, more angular than Betty's, are tacked on forward of the tail and show more taper forward than aft. Peggy's nose is longer than those of most Japanese bombers; its angular lines will also help distinguish it from other enemy twin-engine planes.

INTEREST: Expected to become most important, Peggy is regarded as a replacement for Sally. Besides level and torpedo bombing, its duties may involve reconnaissance or suicide missions. Fitted with armor plate and self-sealing fuel tanks, Peggy carries four 12.7-mm. MG's in nose, tail and waist, and a 20-mm. cannon in the dorsal turret. Maximum bomb or torpedo load is 1,760 lb. for a 2,000-mile range. The 18-cylinder radial engines, which develop 1,890 hp. at take-off, give it a cruising speed of 200 m.p.h. at low altitudes.

JUNE 1, 1945
FROM DATA CURRENTLY AVAILABLE

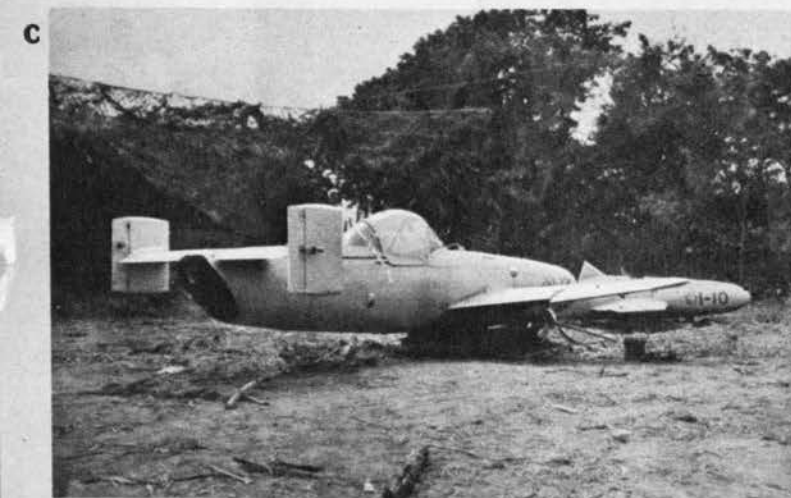
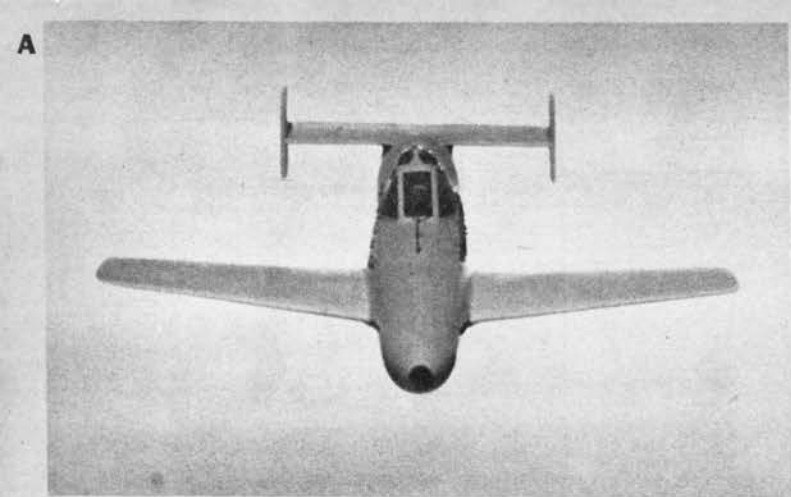
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 1

PEGGY 1



SPAN: 73 ft., 10 in.
LENGTH: 61 ft., 4 in.
APPROX. MAX. SPEED: 350 m.p.h.
SERVICE CEILING: 30,000 ft.

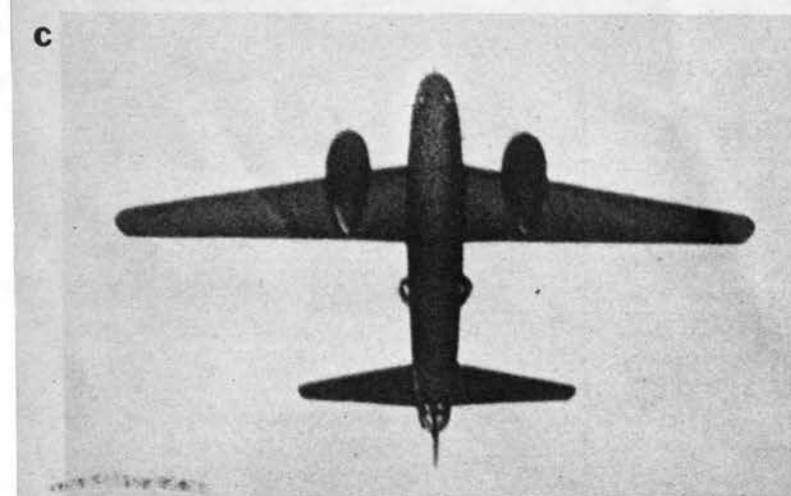
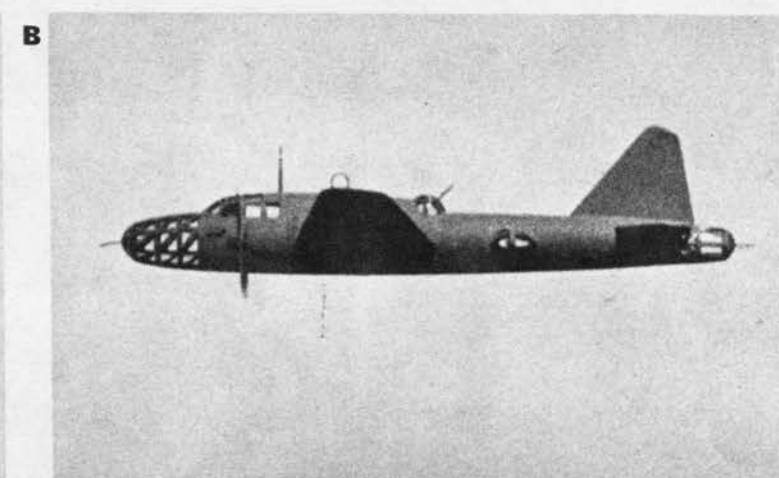
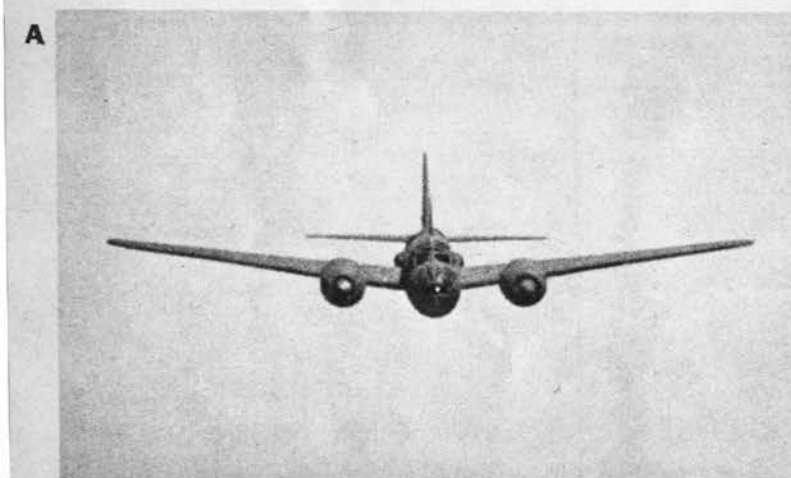
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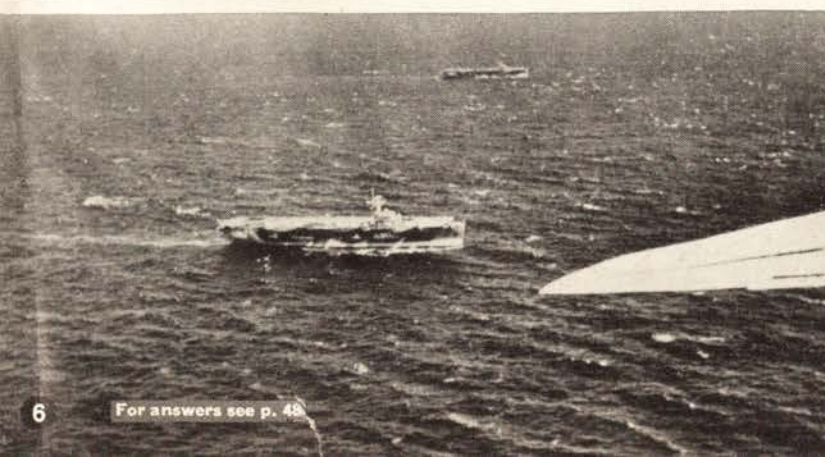
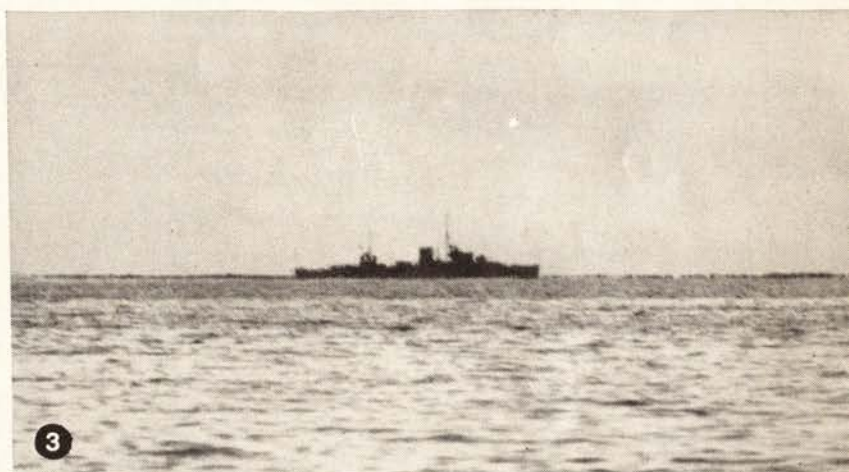
↑ **BAKA**, a logical extension of Kamikaze idea (see pp. 3-5), carries its pilot to death behind a warhead containing 1,000 lbs. of high explosive. Launched by a parent plane, it has rocket units which give it a possible speed above 600 m.p.h. at impact.

PEGGY is Japan's first operational army bomber since Helen. Fast and versatile, it appears both in bomber version (*below*) and in an unarmed reconnaissance version which has solid plywood cones at nose and tail and lacks bomber's side blisters.

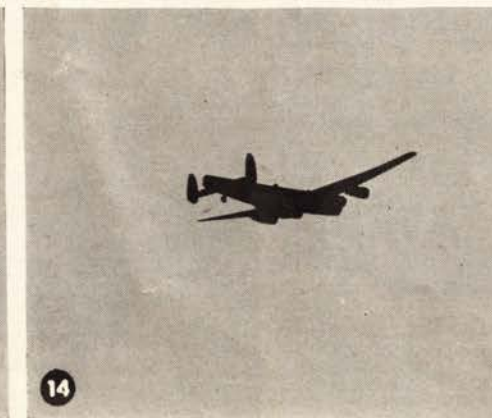
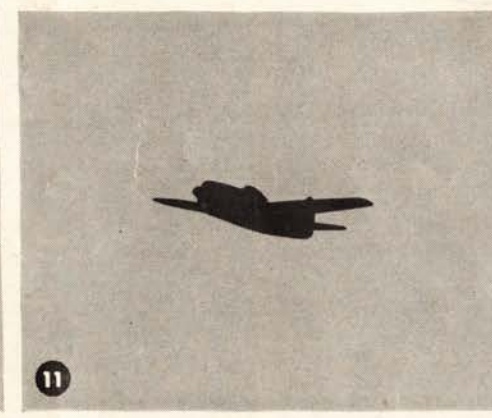
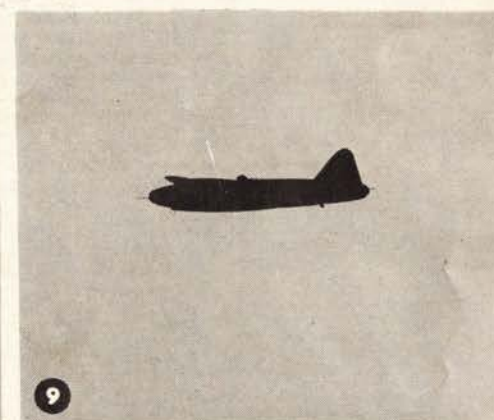
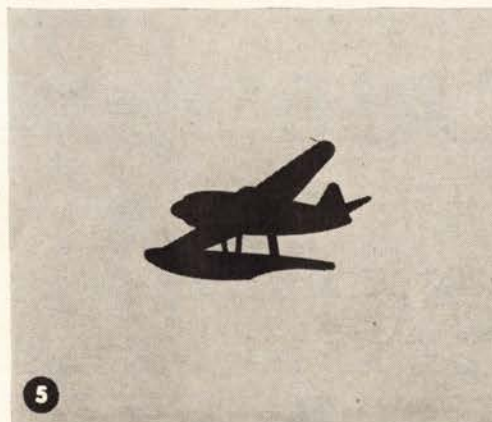
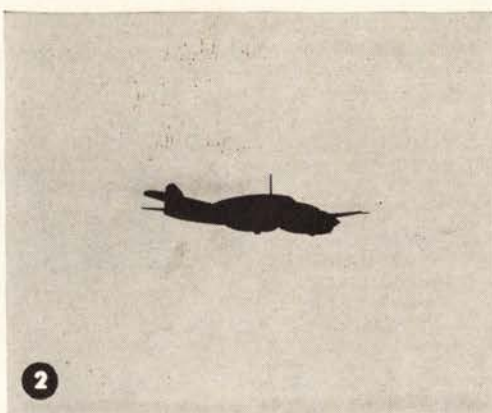
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QUIZ NO. 4: BRITISH SHIPS OF MANY TYPES



QUIZ NO. 5: THIS MONTH'S SILLOGRAPHS



RECOGNITION

JOURNAL



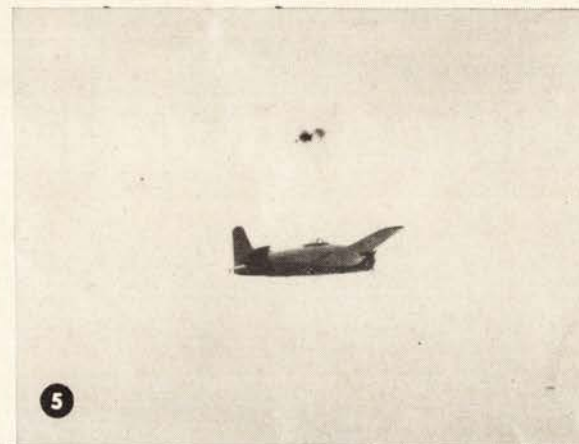
MISSION: JAPAN

~~RESTRICTED~~
AUGUST, 1945
NUMBER 24

WAR DEPT.
NAVY DEPT.



QUIZ NO. 1: NEWEST PACIFIC WARPLANES



RECOGNITION

NUMBER 24

AUGUST, 1945

JOURNAL

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BRITAIN'S NEW LINE

The end of the war in Europe and the beginning of British redeployment to the Asiatic theater has been made the occasion for releasing a spate of new British aircraft for restricted publication.

For the most part, these new faces in the Pacific war will not be entirely unfamiliar; recognitionally, they are much the same aircraft as Britain has been using in Europe. Some, like the latest Spitfire, Lancaster and Halifax, are only variations on the RAF's standard themes. Others, like the Spiteful and Hornet, are developments from well-known British aircraft. Only the Blackburn Firebrand is a completely original airplane in appearance, and it resembles nothing Japanese. However, the fact that many of these planes will be operating in the Pacific for the first time is an important reason for all Allied personnel to know their recognition features.

Besides the Firebrand, two of the planes on the following pages are different enough from anything that has gone before to rate new names. These are the Spiteful and the Hornet. Both are named in the British tradition of family groups: the Spiteful is an obvious outgrowth of the long Spitfire line; the Hornet joins its parent Mosquito in the insect group. In both cases, as the photographs on pages 4 and 5 show, the line of descent is very clear. As far as recognition is concerned, the Spiteful is a Spitfire with bi-tapered, square-tipped wings; the Hornet a boiled-down Mosquito.

Of the new models of standard equipment, the Beaufighter X is the most obviously changed in appearance. The addition of the dorsal fin and nose radome makes the otherwise short but clean lines of its basic design appear awkward. On the other hand, stripping the battle gear from the Halifax bomber has made a very clean-looking cargo plane, the Halifax VIII. One version of the Lancaster (shown on page 6) has been specially adapted to carry "Ten-Ton Tessie," the earthquake bomb, semi-externally.

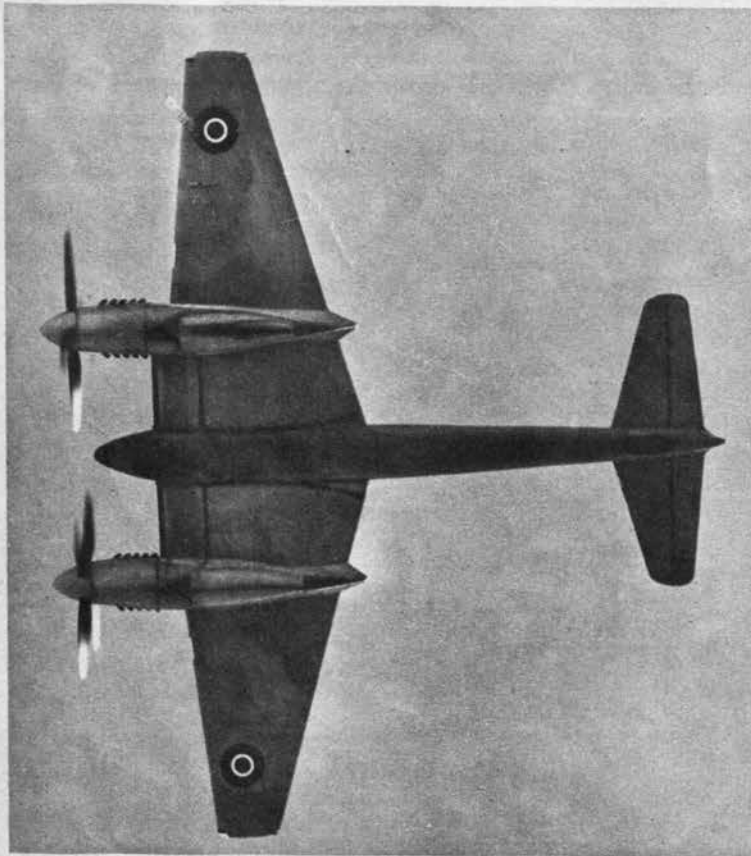


Beaufighter X (above and below) has added a snoutlike radome and a long dorsal fin to its basic airframe, giving it one of the war's most irregular plane shapes. Radome extends the Beau's short nose, while dorsal fin makes recognition easier.





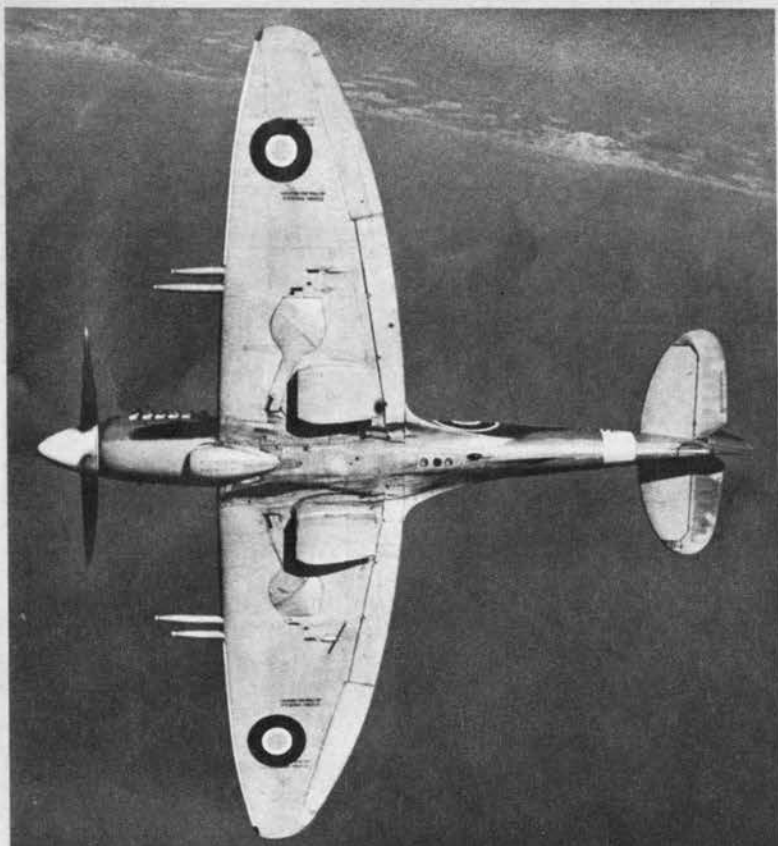
SINGLE-SEAT HORNET LOOKS LIKE SLIMMER MOSQUITO. TOP SPEED OF ABOUT 470 M. P. H. MAKES IT ONE OF FASTEST PROPELLER-DRIVEN PLANES



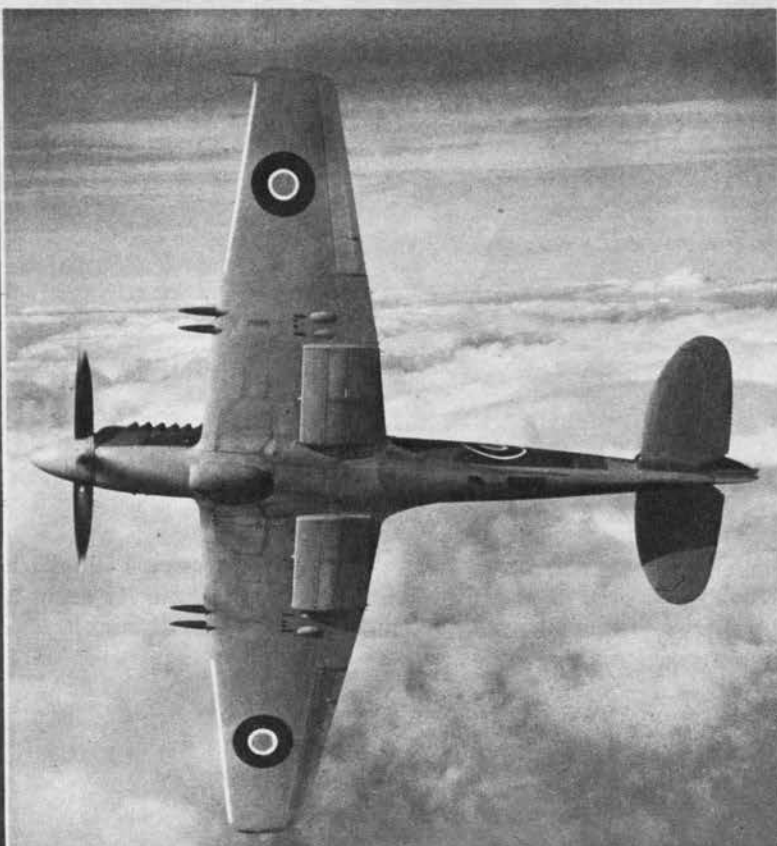
Hornet in plan shows angular wing and tailplane, long slim fuselage. The small pointed nose is markedly shorter than the engine nacelles.



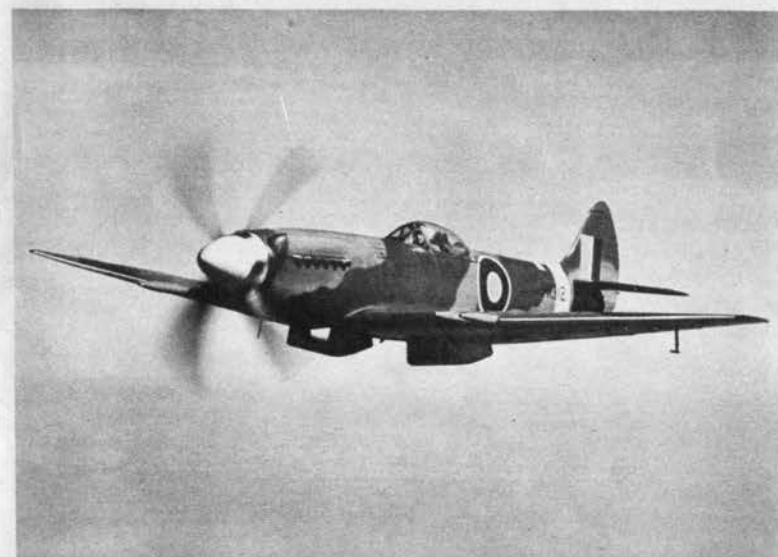
Mosquito in plan has graceful curves, is one of the cleanest airplanes. Radiators on leading edge of wing appear on both Hornet and Mosquito.



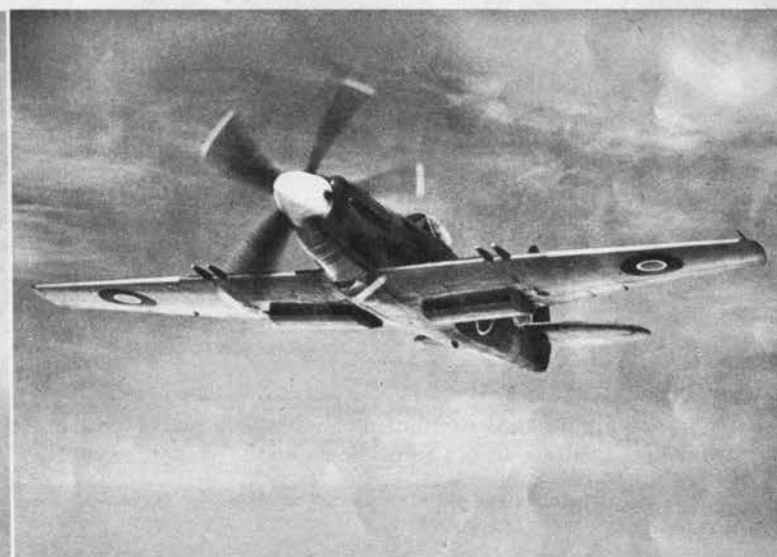
Spitfire 22 (above), latest mark in a war-spanning line, offers a contrast in style to the latest Supermarine fighter, the Spiteful. Latter's angu-



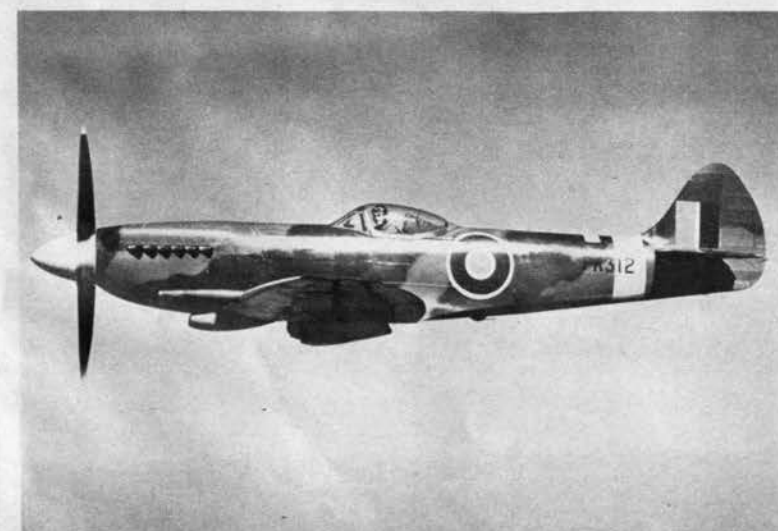
lar wing differs widely from the Spitfire's famous ellipse. However, the slender fuselage and the elliptical tailplane retain the family lines.



In quartering view, Spit and Spite look most alike. Spiteful's wing has less dihedral; airscops are wider and shallower. The Spiteful has the



five-bladed propeller which is a feature of the Spitfire XIV. Its reported top speed of 460 m.p.h. puts it in a class with fastest fighters.



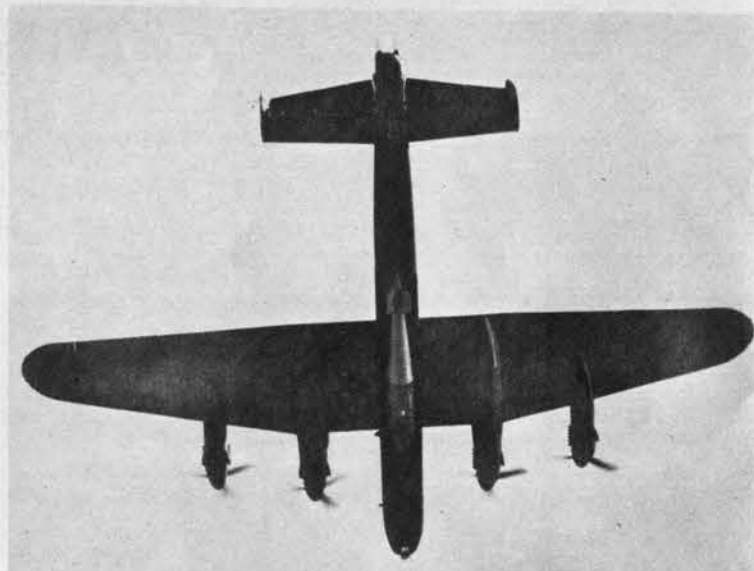
Personality differences are apparent in direct beam view. The Spitfire (above) is characterized by straightness of back and belly lines. Spite-



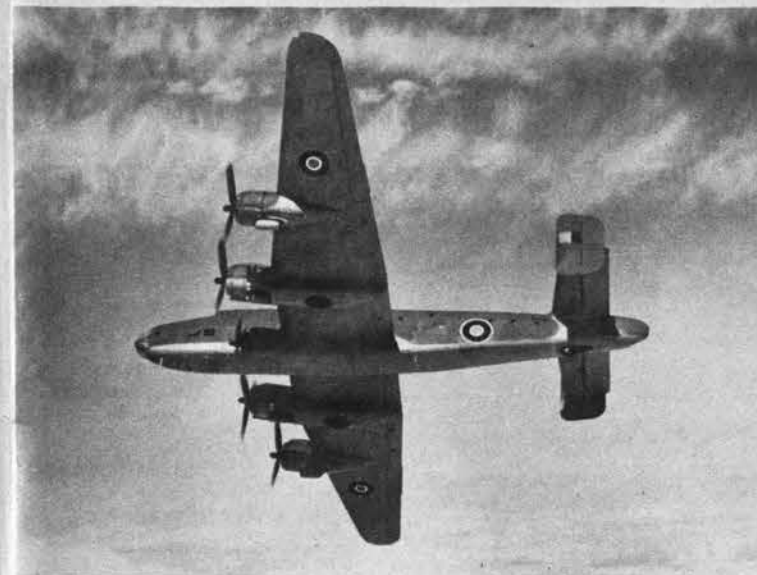
ful's dorsal line curves downward from its bubble canopy to its tall fin and slender nose. The new plane looks even more sleek than the Spit.



Massive eleven-ton bomb is too big for even Lancaster III's box-car fuselage, hence must hang half in, half out of modified bomb bay.



Lancaster III when carrying "Ten-Ton Tessie" differs mainly in the bomb bay. From certain angles the outline is unchanged by big bomb.



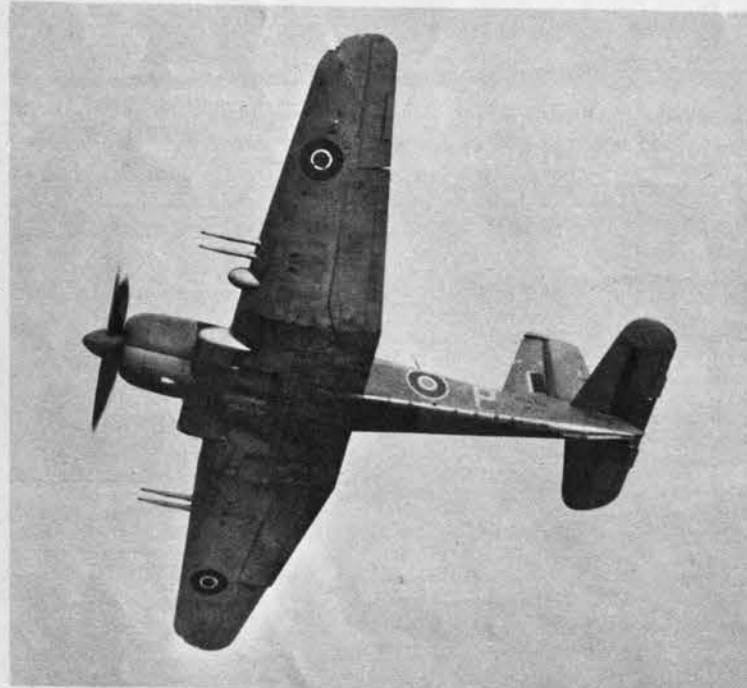
Veteran Halifax now flies as a transport in its unarmed, Mark VIII version. Halifax VIII will be fitted with belly bulge to increase capacity.



Fast Halifax transport parallels the Lancastrian, a similar reworking of Lancaster bomber design. Streamlined cone replaces tail turret.



Firebrand's wing has straight inboard panel broken by two projecting air intakes. Training camera forms bump on the port outer panel.



Extreme narrowness of fuselage is distinctive trait of Firebrand in any plan view. Also note broken wing and the pushed-back tailplane.



ROYAL NAVY'S OWN ATTACK PLANE IS THE NEW BLACKBURN FIREBRAND, WHICH SUPPLEMENTS AVENGER AS ALL-ROUND CARRIER-BASED BOMBER. UNIQUE FEATURES INCLUDE HUGE FIN AND RUDDER SET FORWARD OF TAILPLANE



SLEEK P-80A'S SWEEP PAST MT. VESUVIUS DURING A VISIT TO ITALY. LONG AND LEAN UP FRONT, THE SHOOTING STAR HAS A THICK TAIL PIPE WHICH

CAUSES IT TO LOOK HEAVY AT THE REAR



Seen head-on, P-80's nose looks like bleached skull of a horned animal. Openings between air intakes are for a landing light and six .50-caliber MG's. Slight wing dihedral stems from roots.



Shooting Star's wing has curved tips, even taper. Note wingtip shackles which support either bombs or fuel tanks. Vertical tail surface, which is rounded on top, curves sharply into fuselage.



Hot exhaust from P-80's tail blurs this view of the Mojave Desert as plane approaches a dummy target warship. Other features include a heavy, rounded fuselage, triangular tailplane.

P-80A, U.S. JET FIGHTER

The P-80A, first USAAF operational jet-propelled warplane, will soon be ready for combat use. Outclassing all U.S. and known Japanese airplanes in speed and rate of climb, it is likely to become one of the Army's best fighters. Moreover, since it is not handicapped by the lack of range which characterized Germany's vaunted jets, it can also serve as a photo plane (F-14).

Powered by a single turbo-jet engine located behind the pilot, the P-80 presents many startling innovations in fighter performance. It has very little engine vibration and, naturally, no propeller torque. The engine can be started and the plane gotten under way in less than a minute; a com-

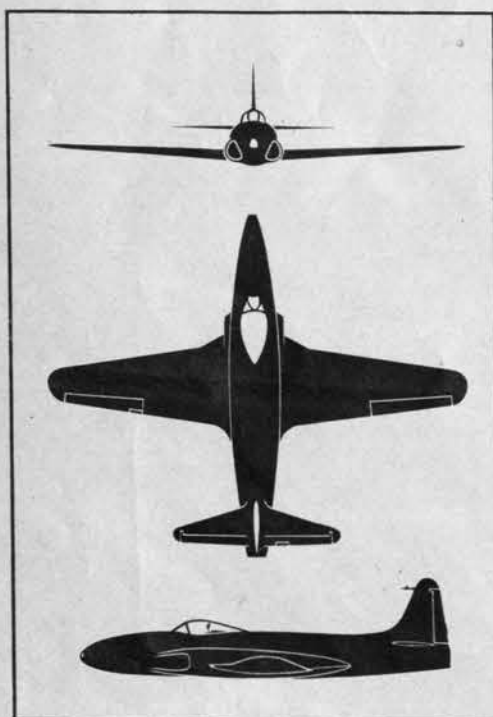
pletely new engine can be installed in less than 20 minutes. Since the turbo-jet unit is most efficient at high speed and altitude, it is impossible to save fuel by cruising. Nevertheless, under military power, maximum speed (well over 500 m.p.h.) and highest rate of climb are attained at sea level. Although both decline gradually as the Shooting Star gains altitude, they are still vastly superior to those of other fighters at 40,000 feet.

Recognition as well as performance is affected by the novel power plant. The pressurized cockpit is mounted well ahead of the wing's leading edge, thus providing exceptionally good visibility. With radio,

Lockheed's new Shooting Star gets ready for Pacific action

armament, oxygen cylinder and a landing wheel concentrated up front, the P-80 has a long, pointed nose in both plan and side view. When seen head-on, however, the nose looks heavy because of the twin air intakes on either side. Another unusual feature is the mounting of jettisonable fuel tanks. Approximately ten feet long, they hang directly under the wingtips. This is a marked change from previous Allied installations.

A complete departure from older fighters, the P-80 even has a special finish to facilitate high-speed flight. It is so much faster than anything else now operational that performance alone is a recognition aid.





Low greenhouse scarcely breaks Grace's backline. The nose is compact. Lines in general are compressed, give impression of sturdiness.

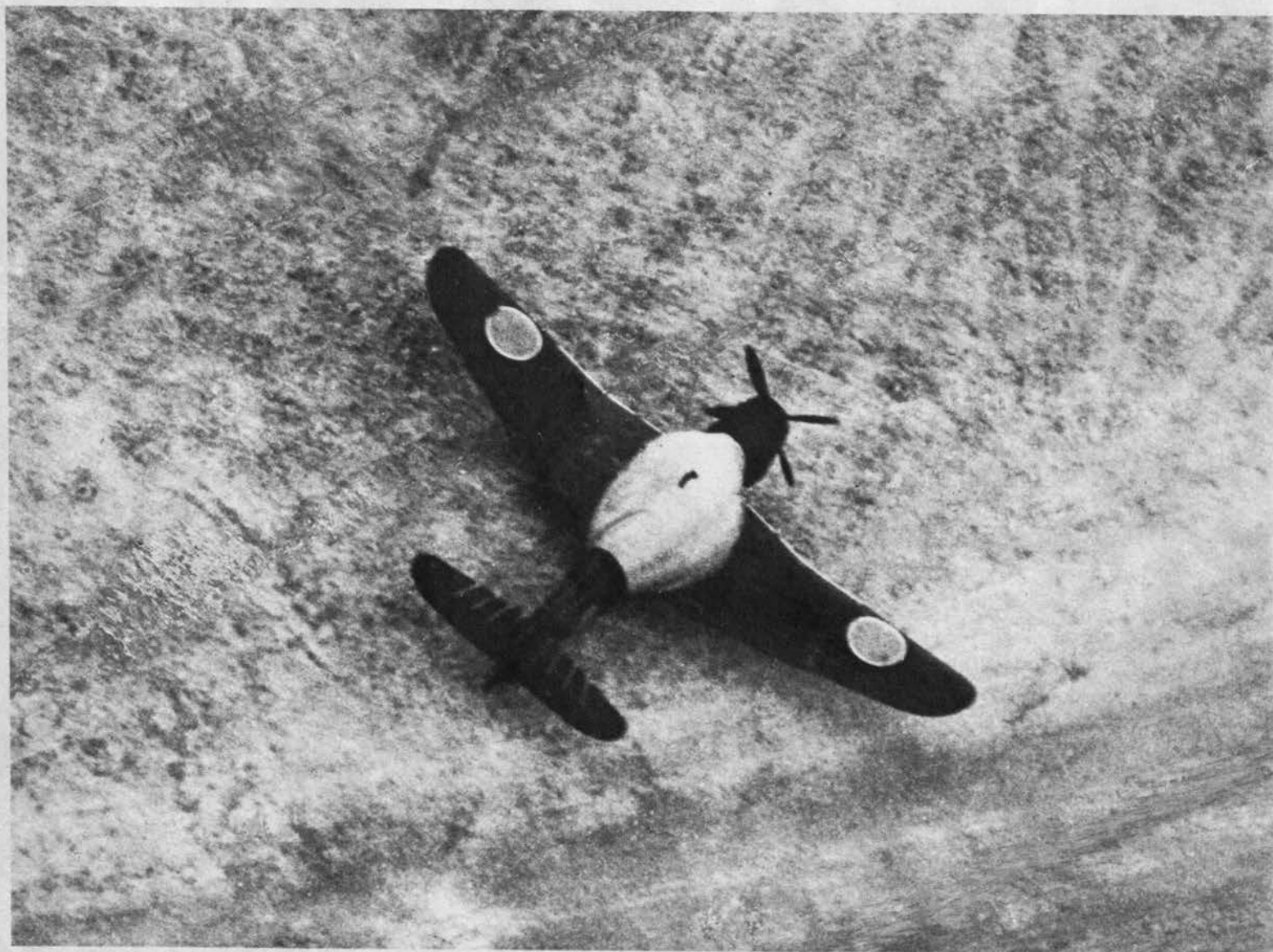


Randy, new Jap fighter, resembles Nick but has cleaner greenhouse, flat-topped tail, longer nacelles protruding past the wing's trailing edge.

JAPS SEND GRACE, RANDY AGAINST U.S. ATTACKERS

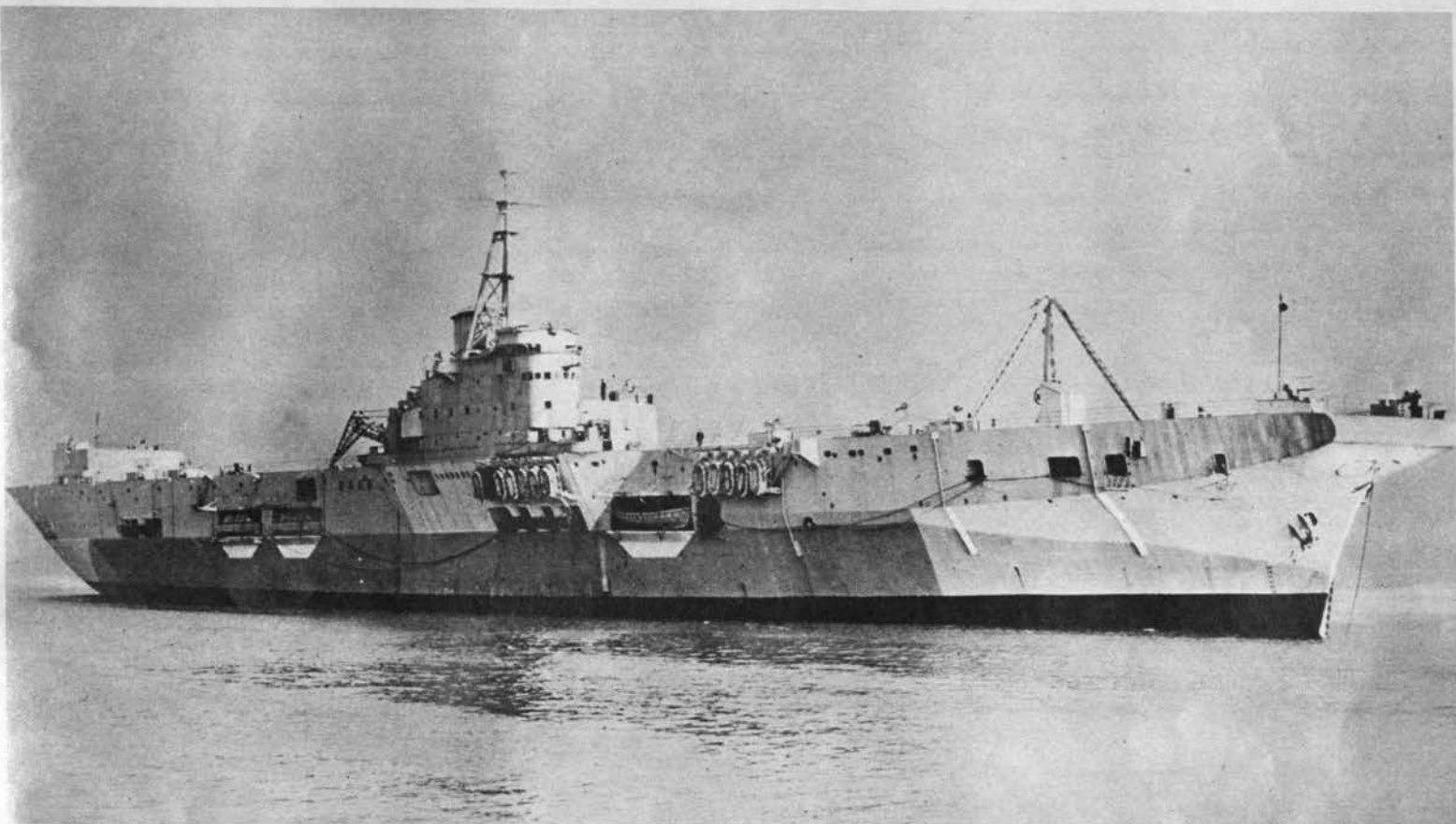
In the fall of 1944, first news of a Japanese carrier-based torpedo and divebomber named Ryusei (Shooting Star) filtered in to U. S. intelligence officers. Code-named Grace, the new plane is now definitely operational. Since pictures of Grace have been extremely scarce, additional views are presented on this page (top left and bottom). They give a good idea of how Grace looks as a target in the air and on the ground.

For some months now, there have been reports of new twin-engine interceptors coming up to engage B-29's over Japan. One of these, the Ki 102, was at first thought to have twin booms as well as two engines, but now reliable information reveals it as a conventional twin-engine fighter quite similar in appearance to Nick. This new plane has the code name Randy, and while photographic coverage is not yet available, the rendering at left is believed to be accurate. Randy has a top speed of approximately 360 m.p.h. and performs very well at high altitudes. It appears in two versions. As an assault plane it is reported armed with a 57-mm. and two 20-mm. cannon in the nose and a 12.7-mm. in the greenhouse. When it is used as a high-altitude fighter, Randy carries two 20-mm. and one 37-mm. cannon in the nose.



Strafing close-up catches Grace with bulky canvas wrapped around its greenhouse like a cocoon. The break in the inverted gull wing is less

sharp and farther outboard than on our own Corsair. Its leading edge is almost straight; the tips are raked. The tailplane has a small bite.



Light carrier of the Colossus Class now serves as an aircraft maintenance ship, has been renamed the Pioneer. Sponsons have been omitted

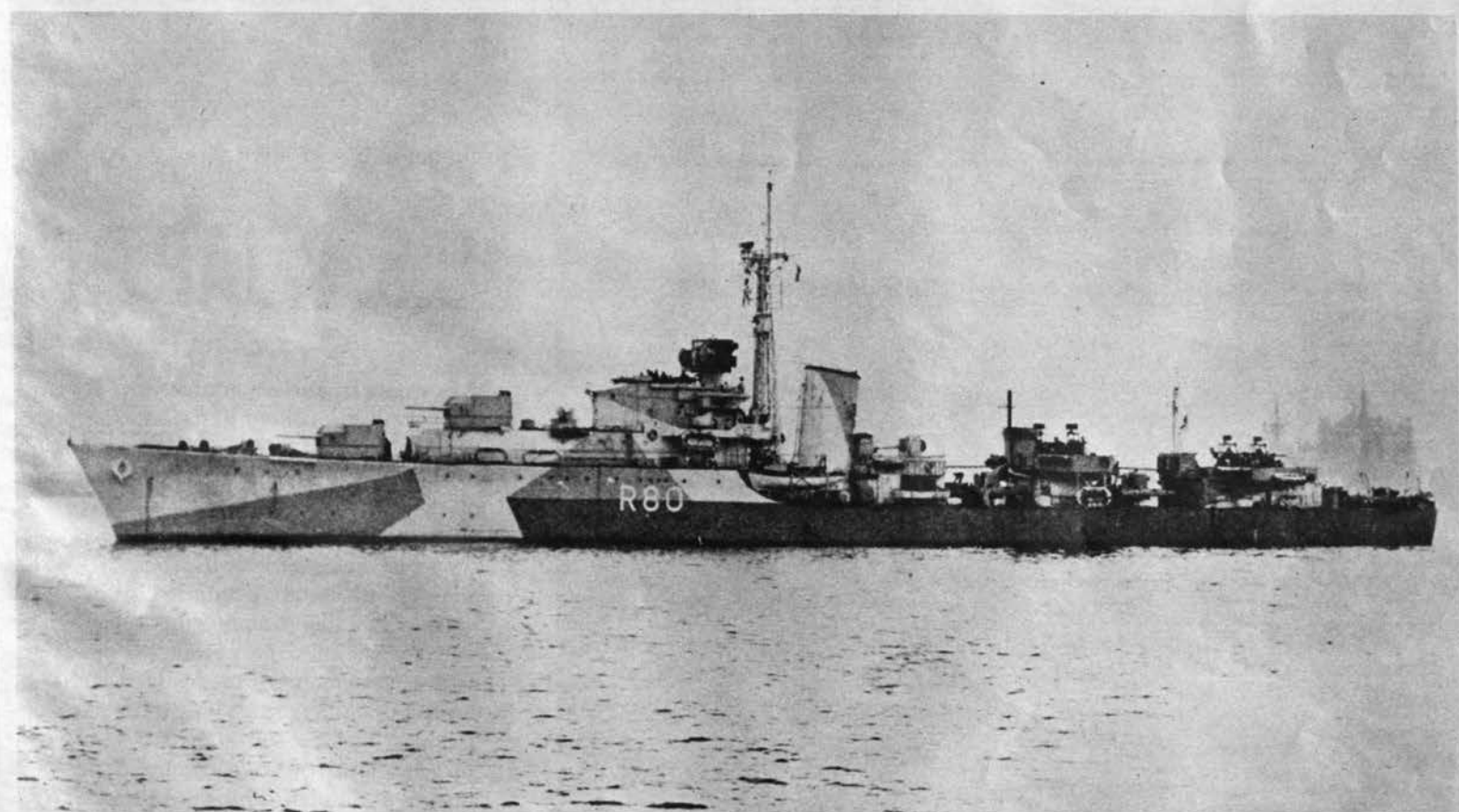
and deckhouses added at the stern and inboard of the island. Airplanes no longer land or take off, but are handled by a crane aft of the island.

NEW BRITISH DD & REBUILT CVL

Newest warships in the Royal Navy include H.M.S. Pioneer (*above*), an aircraft maintenance ship, and the Battle Class DD (*below*). The Pioneer, one of two new Colossus Class CVL's, retains all the hallmarks of British carrier design, while the Battles closely re-

semble Britain's familiar one-stack DD's.

However, one striking feature sets the Battle Class apart from other DD's. Main armament, four 4.5-in. guns, is all forward in two gunhouses, leaving the afterdeck free for a heavy array of 40- and 20-mm. AA.

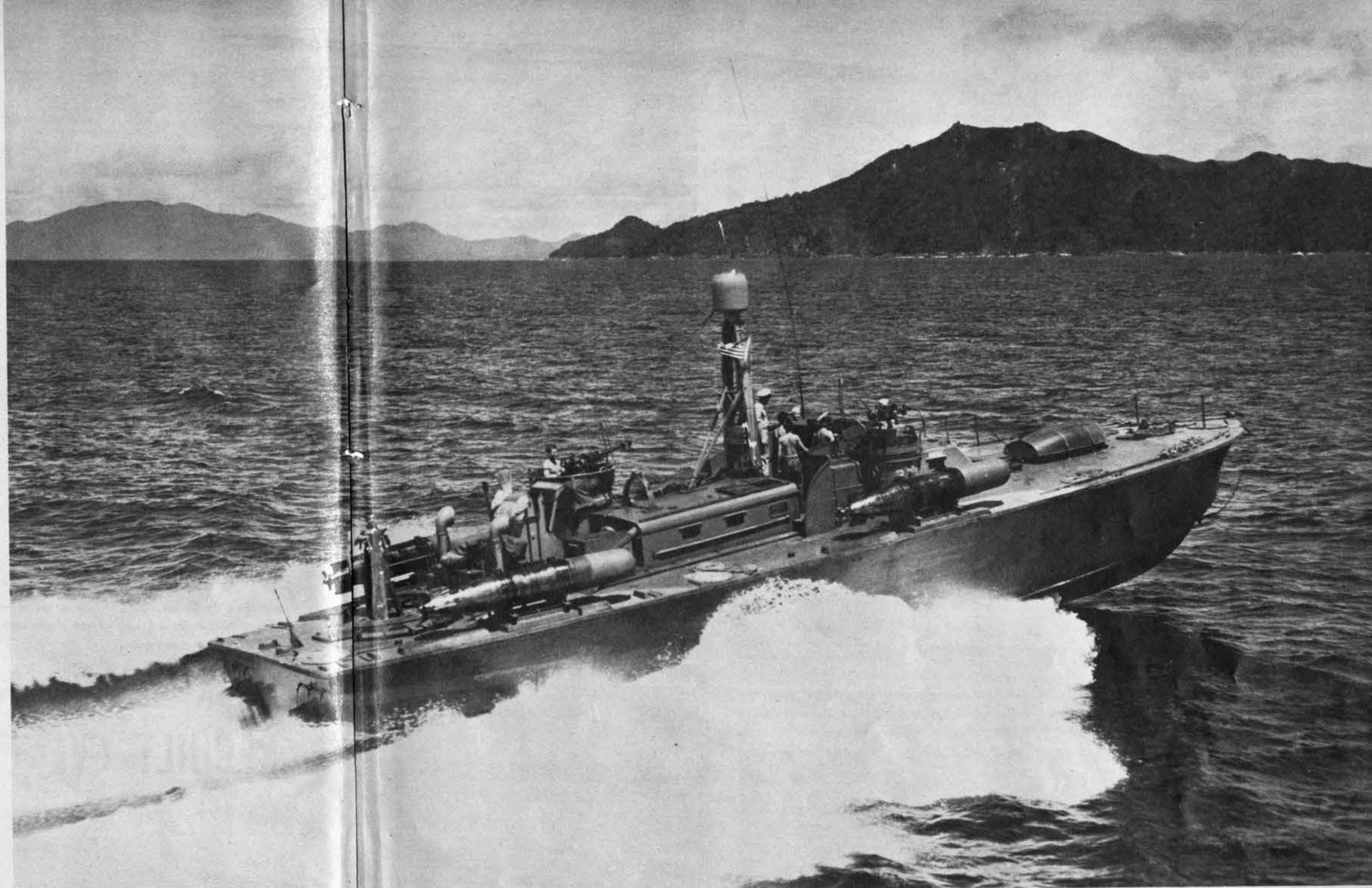


Battle Class displaces 2,207 tons, is largest modern British destroyer design. Main battery is in two twin gunhouses forward; AA is amid-

ships and on after deckhouses. Simple bridge, trestle mast and heavy, single stack are all carry-overs from the numerous "J"- "Z" DD group.



Simple, flat-sided hull of new type of Jap PT is seen in these overhead views. Depth charges are carried on the stern. Torpedoes, usually two, lie in tubes at each side. Picture below shows the straight bow railing, which is a recognition feature. U. S. railings are curved.



HIGH-RIDING U. S. PT BOAT BRISTLES WITH ARMAMENT. FOUR TORPEDOES MAY BE CARRIED IN MOUNTS ALONG GUNWALES FORWARD AND AFT OF CABIN. SILHOUETTE IS PUNCTUATED BY MELONLIKE RADOME

U.S. & JAP PT's

Now that Japanese-manufactured PT boats have been sighted patrolling the inland sea areas around Japan, a comparative study of U. S. and Jap types can be made. Pictures of the Netherlands-built PT's which were confiscated and used by the enemy were shown in the April 1945 *Journal*. These new pictures enable us to round out our story.

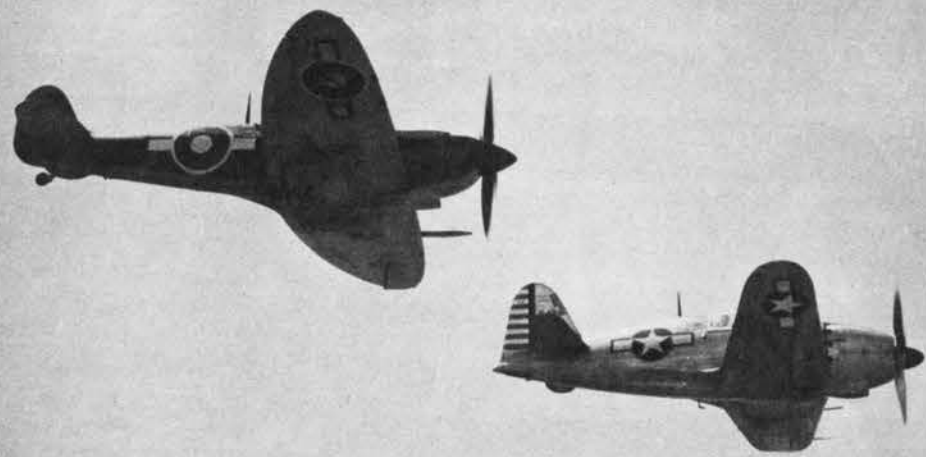
Jap PT hulls, simply and economically constructed, curve only along the bow, then have a straight, even taper. U. S. hulls are curved along the entire length of the boat, flare more than flat-sided Japs in head-on view. Jap armament features prominent gun tubs forward of thin stick mast, while U. S. PT's have small turrets on each side of the bridge. Our PT's also have unprotected guns forward.



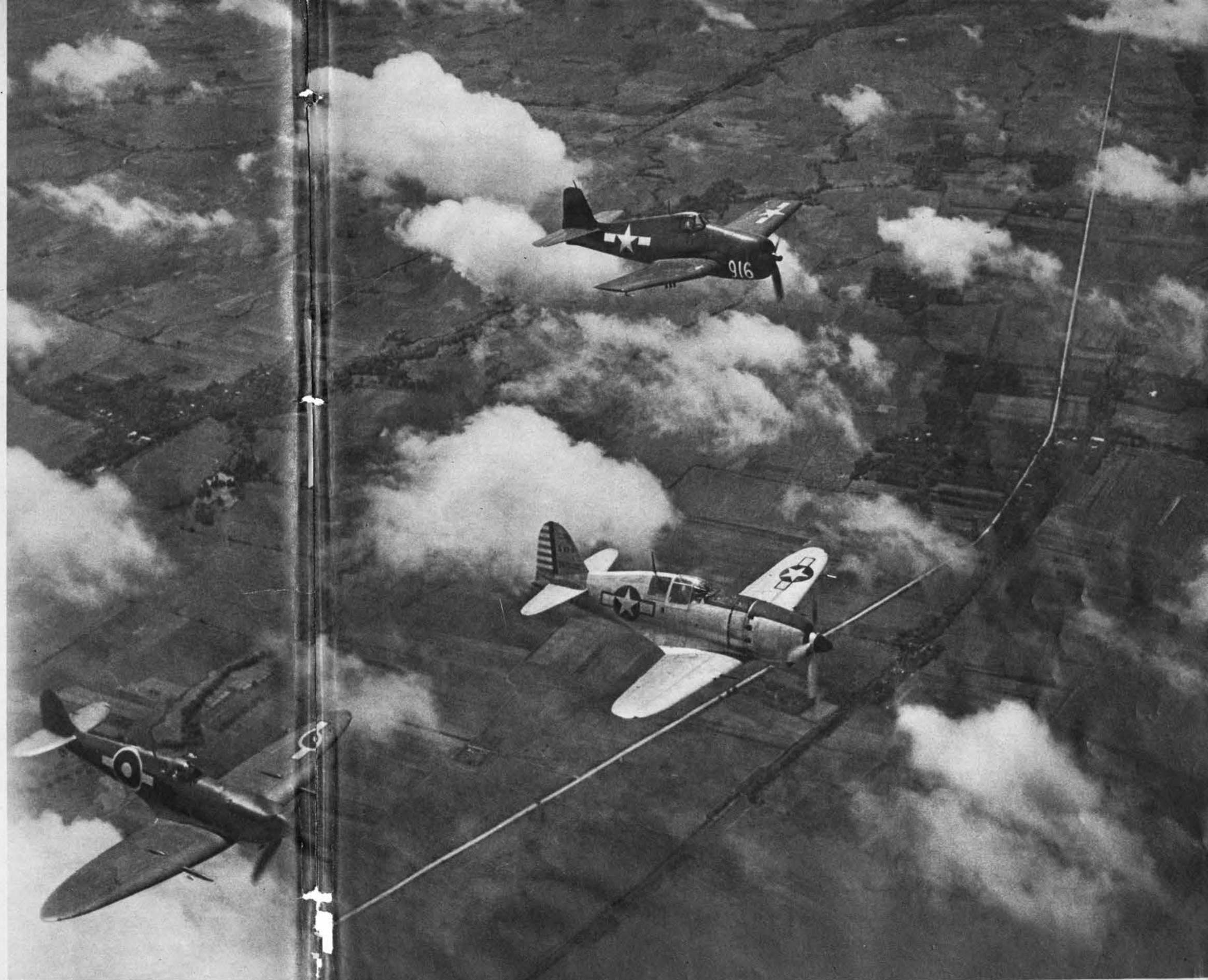
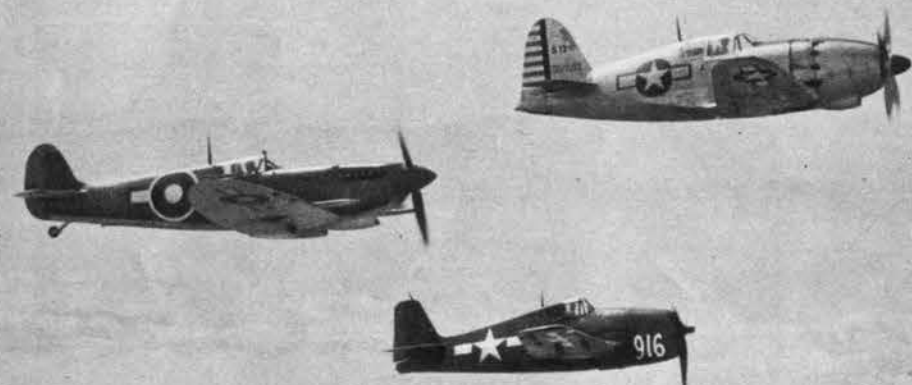
Comb-type radar on latest U. S. PT may be used widely in the future. Tougher to spot than the radome at top, it is still a recognition clue.



Broad curved deck of U. S. PT carries more cannon and MG's than Japs'. Flaring lines and four torpedo mounts stand out in contrast.



Three top fighters show contrast. Above, the Spitfire's elliptical wing differs from the rounded, tapered Jap wing and the F6F's angular Grumman wing. Below, the contrast in beam view is equally marked between the lean Spitfire, the stocky F6F and plump Jack.



ABOVE THE PLAINS OF LUZON, A RNZAF SPITFIRE, A JAP JACK WITH U. S. MARKINGS AND A U. S. NAVY HELLCAT COMPARE NOTES, SUPPLY A FINE SET OF PHOTOGRAPHS FOR ALLIED RECOGNITION STUDY

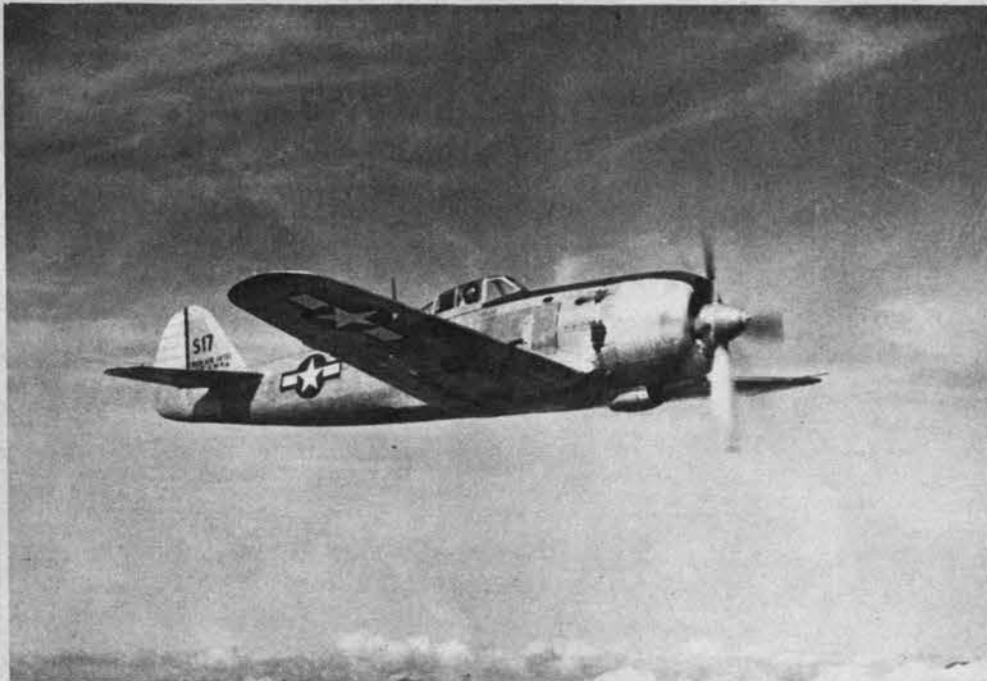
ALLIES FLY JAP CRAFT

When U.S. forces swarmed back into the Philippines six months ago, a wealth of intelligence material came into our hands. On the airfields of Luzon were scattered representatives of almost every Jap plane type, including two of their newest and best fighters, Frank and Jack, and their top navy divebomber, Judy 33. In order to get tactical and technical in-

formation, these planes were repaired and assembled, then flown with a British Spitfire, a Navy Hellcat and an Army Mustang. This spot comparison makes certain in detail what our combat fliers have known in general: the Japs are good but they have serious deficiencies. They have good speed and climb and excellent maneuverability at low speeds, but their maneuverability

falls off badly at high speeds and they can not be relied upon mechanically. Nevertheless, they remain dangerous weapons when flown by fully qualified pilots.

Besides technical details, the test gave recognition training some rare material: flying photographs of new enemy equipment in the same flight attitudes as the equipment which the Allies will use against them.



Frank's wing with straight leading edge, blunted tips often causes it to be reported as Oscar. In beam view (below) long slender fuselage shows family relationship to older fighter.



HERE ARE FOUR OF THE BEST FIGHTERS WHICH WAR HAS PRODUCED: THE BRITISH SPITFIRE, THE JAPS' FRANK, U.S. NAVY'S F6F AND U.S. ARMY'S GREAT P-51. ALL HAVE RADICALLY DIFFERENT DESIGN



Radial Judy has low mid-wing unusual in Jap planes. As on other Jap light bombers, greenhouse is long and high. Fuselage appears clean.



Judy 33, now being produced in great numbers, differs recognitionally from model 11 only by the rounded nose given by radial engine.



Fast high-powered fighter, Jack has a tail extending aft of tailplane. Fat fuselage resembles no other Jap single-engine type except George.



Jack head-on retains bumblebee appearance with short wing and fat round fuselage. Unbroken dihedral is characteristic of most Jap types.

JMST

Standard method of reporting Japanese merchant shipping

Although there are few recognition clues for determining the nationality of individual merchant vessels, once the location and disposition of shipping has identified it as Jap there is a simple method of classifying it as to type and tonnage. This system, used by both the Army and Navy for reporting, is JMST (Japanese Merchant Shipping Tonnage). In its January 1945 issue the *Journal* told what JMST is and how it is being used. Since then further use of the system and more information about the Japs have necessitated some minor changes in the presentation. The chart at the right shows JMST up to date.

Under the JMST system all merchant ships are divided into four divisions which are named in phonetic language by their initial letters: Fox (Freighter), Fox Tare (Freighter Transport), Tare (Transport) and Sugar (Stack Aft). A sighting is assigned to one of these general groups according to the form of its superstructure: whether it is split, composite, long composite or stack aft.

Under each one of these main headings, differences in size and appearance are marked by the letters A, B, C, D (code words: Able, Baker, Charlie, Dog). In the big Sugar division there is a second subdivision—Large, Small, Intermediate (code words: Love, Sugar, Item). The spotter places a ship in these narrower categories by the number of hatches and masts, presence of catwalks or other details. In the Fox division, it must be remembered that kingposts and hatches in the split of the superstructure, and kingposts aft of the mainmast are not counted.

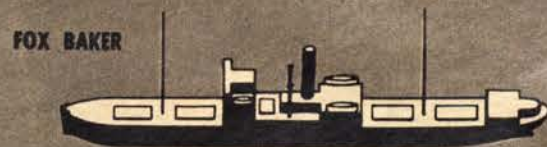
When the pilot or lookout cannot decide in which division an enemy vessel belongs, he reports it as Mike Victor (Merchant Vessel). If he can identify a division or subdivision—Fox, Tare, Sugar Baker etc.—but no further, he reports the division name with the code word Uncle for Unidentified. In all incomplete reports he gives a tonnage estimate as well.

FOX SPLIT SUPERSTRUCTURE



FOX ABLE

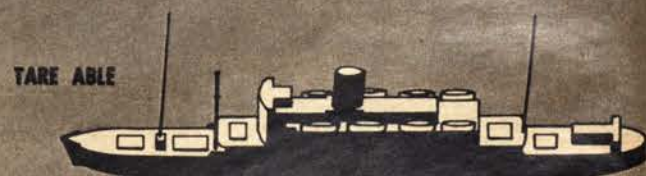
Min. of 3 masts or kingposts, 5 hatches. Either identifies. 5,500-7,500 GT



FOX BAKER

Max. of 2 masts, 4 hatches. Either identifies. 3,500-6,000 GT

TARE LONG COMPOSITE SUPERSTRUCTURE



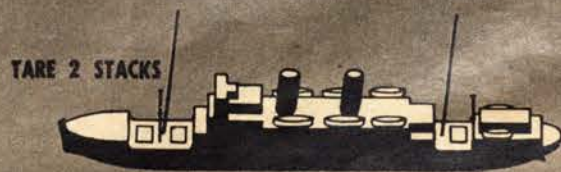
TARE ABLE

Min. of 3 masts or kingposts. 4 or 5 lifeboats per superstructure side. 9,000-12,000 GT



TARE BAKER

Max. of 2 masts or kingposts, 3 lifeboats a side. Masts at superstructure or on fo'c'sle, poop. 1,500-3,500 GT



TARE 2 STACKS

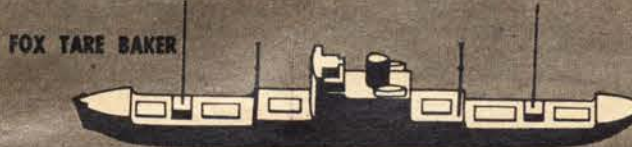
4,000-6000 GT

FOX TARE SHORT COMPOSITE SUPERSTRUCTURE



FOX TARE ABLE

Min. of 4 masts or kingposts, 6 hatches. No storm decks (no break in deck at 2nd, 3rd masts). 7,000-8,500 GT



FOX TARE BAKER

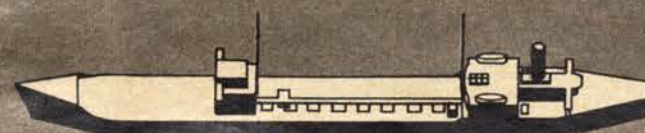
Min. of 4 masts or kingposts, 6 hatches. Storm decks (break in deck at 2nd, 3rd masts). 5,500-7,500 GT

SUGAR STACK AFT



SUGAR ABLE LOVE

Catwalk fore and aft. Mast forward. 10,000 GT



Catwalk aft only. No mast forward. 10,000 GT



SUGAR ABLE ITEM

Catwalk aft only. Mast forward. 5,200 GT



SUGAR ABLE SUGAR

No catwalk. Trunked deck. 1,000-2,500 GT

FOX TARE CHARLIE



2 masts or 4 hatches. Either identifies. (80% are of this type.) 2,000-4,500 GT



Masts or kingposts on forecandle, poop. 4 hatches. 2,000-4,500 GT. (Type K Ore Carrier is 5,300 GT)

FOX TARE DOG



Superstructure aft of amidships. 3 hatches with mainmast off-center. 700-1,300 GT

SUGAR BAKER LOVE



No catwalk. Bridge forward. Masts centered. 6,600 GT

SUGAR BAKER SUGAR



No catwalk. Bridge forward. Mast on forecandle. 1,900 GT

SUGAR CHARLIE LOVE



Bridge aft. Foremast separated from forecandle. 3 hatches. 2,300 GT

SUGAR CHARLIE SUGAR



Bridge aft. Foremast amidships or on forecandle. 2 hatches. 300-850 GT

SUGAR DOG



Bridge aft. 1 mast. 1 hatch. 70-150 GT



**B-29 SUPERFORTS ON THE
HIGH ROAD TO JAP EMPIRE**



BRIG. GENERAL "ROSY" O'DONNELL BRIEFS PLANE MEN BEFORE HE LEADS THEM ON MISSION AGAINST JAPAN

B-29 MISSION

BOMBER CREWS SEE EVERYTHING, MUST KNOW RECOGNITION

In this issue, the *Journal* is presenting a pictorial summary of what B-29 crewmen see on a typical mission as they make their 3,200-mile over-water flights from the Marianas to Japan. Striking almost daily, the big Superforts are well along in their drive for the systematic destruction of Japanese industry. A campaign which began with precision attacks on war factories, then shifted to mass incendiary raids on industrial areas of Japan's major cities, has now entered a new phase. In June the B-29's turned to other targets, smaller manufacturing cities like Shizuoka, Himeji, Okayama and Nobeoka. By July 19, 42 Japanese cities were totally or partially destroyed.

While carrying out this destruction, the B-29's have been a highly important arm of U. S. military and naval intelligence. Their cameras are continually assessing bomb damage, finding new targets, spotting antiaircraft emplacements and reporting the disposition of the Japanese air force. And supplementing

this photo reconnaissance are the observations of the crews.

To help the Superfort crews concentrate on the most significant object of their sightings, officers in charge of briefing cover not only what they are expected to encounter but also what they are expected to report. The intelligence officer will want to know the number and type of enemy fighters, any unusual tactics they may use, the make-up and course of enemy coastal convoys and anything at all that appears new. The flak analysis officer will tell the pilots what to expect in the way of anti-aircraft fire. Later, he will want to know if there were flashes from any batteries not previously located by photo reconnaissance. Thus, as the Superfortresses take off, the intelligence phase of their journey up, over and back is planned as carefully as possible in order to make later missions easier and safer. On the following pages are shown some specific illustrations of what B-29 crews may be expected to see on the road to Tokyo.

FIRST LAP IS ALL U. S.

Although the B-29 is probably the ultimate in land-based air power for World War II, all of the huge bomber's missions are over water. After the 29's take off, their small island bases soon drop out of sight and the rest of the flight lies over the broad sea approaches to Japan. Outside of lone search planes and other big, long-range aircraft, the chief recognition problem for Superfort crewmen is the shipping below them.

Where these ships are spotted usually serves to answer the question of whether they are friendly or enemy. The first stretches of the Marianas-Japan water jump are blanketed by U. S. air and



B-29 crewmen may spot the ample lines of a C-54 transport heading into Guam, its straight, roomy fuselage loaded with new personnel.



Navy Privateer, scanning sea around Marianas, is easily recognized by lofty single tail, waist blisters fitted to the familiar bulky B-24 fuselage.



U. S. convoys underway toward our forward Pacific bases may sometimes be spotted from high-flying B-29's. Straight-sided cargo ships are

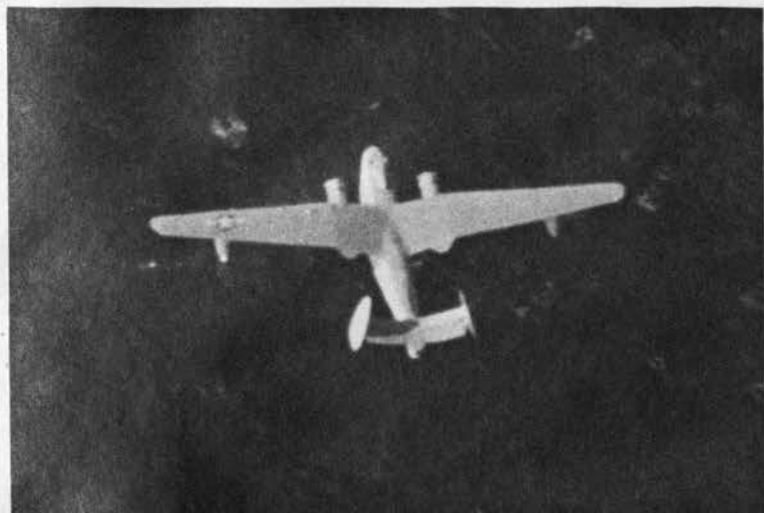
customarily arrayed in parallel rows, with warships ahead (here a Colorado Class battleship and a Fletcher destroyer) and astern (CVE's).

seapower and it is not until the B-29's reach the doubtful area between U. S. control and the shrinking sphere, still more or less Japanese-dominated, that recognition actually becomes crucial. However, Superfort crews must always be on the alert for any sneak penetration attempts by the Japanese. In addition, they must know our own ships well and also have a good idea of their position.

On this first lap of the flight ships are seen from low enough heights for ordinary recognition. The Superforts stay at 4,000 to 8,000 feet, which is their most economical cruising altitude, in

order to burn up some of their heavy fuel load before climbing.

Northward the route is thick with U. S. convoys supplying the strong points of our front across the Volcanoes and Ryukyus. Occasionally a carrier task force is seen spread out below. Besides the bombers and flying boats on search or air-sea rescue patrol, Superforts will pass transport planes carrying personnel and high-priority cargo into Iwo and Okinawa. Still farther north, shipping thins out as the B-29's enter the second phase of the over-water flight. Here, the possibilities on ships and airplanes sighted narrow down, for the most part, to one thing: the enemy.



On the deck, a Navy PBM displays to Superfort observers the unmistakable, awkward diagonals of its cranked wing and dihedral tailplane.



Shallow hull of a patrolling PBV, with its up-swept, smoothly faired fin and rudder, is slung beneath the broad, rectangular wing surface.



U. S. task force, swinging to starboard, trails long, curling wakes. The carriers can be picked out by the long, indented rectangles of their

flight decks. Two fleet oilers (*center*) are marked by their stack-aft superstructure. Oiler hulls are long but blunt like all cargo vessels.

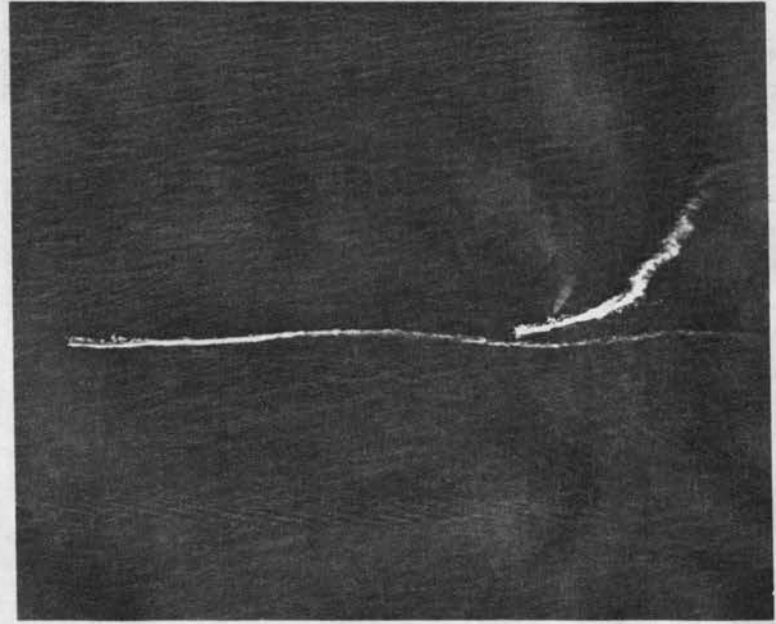
THEY SPOT JAP SHIPS

After the Superforts enter the ocean areas near Japan, ship sightings become less frequent but much more important. B-29 missions are aimed straight for the Japanese homeland, but in a secondary sense they are also patrols of Japan's outlying waters. Reports of enemy ships—both naval and merchant—fill in the complicated pattern of reconnaissance and intelligence on Japanese maritime activity.

Little is seen of Japan's flag-end navy except for scattered patrol and picket vessels. Deep-water convoys, too, are scarce, although B-29 sightings are radioed back to headquarters and relayed to the



Jap Special Patrol Craft is typical of the minor warships guarding Jap waters. Sightings such as this are reported only in interrogation.



Two Jap LST's, probably carrying reinforcements to threatened bases, can be recognized by irregular deckline, pilothouse aft of amidships.



Good-sized Jap convoys like the one here are immediately reported by radio to the B-29's home base, which then forwards the flashes to

the Navy. The crewmen could be sure this sighting was a merchant convoy by the broad-beamed, unstreamlined hulls of the freighters.

Navy. The B-29's do not attack any ship targets, nor can they circle for a better look. They maintain course at roughly 240 m.p.h. and must depend on a quick, sidelong glance downward. This calls for proficiency in high-altitude ship recognition, a good knowledge of formations and hull shapes (see *July Journal*, pages 14 to 19).

Nearing the Japanese coast, the 29's begin the slow, arduous climb to their daylight bombing altitude of 16,000 to 19,000 feet. As they push upwards, the seas below them fill up with coastal shipping. Unless something very unusual is spotted, all coastal sightings are kept for the interrogation officers rather than radioed.

At landfall, the emphasis in ship recognition switches from merchant to naval. The surviving heavy units of the enemy's fleet are skulking in Japanese harbors, often under thick and elaborate camouflage. As they move inland, Superfort crews scan anchorages for any change in position, any suspicious concentration.

Now the B-29's prepare for battle. The escorting fighters rendezvous just off the coast and take up their position around the bomber boxes. Japanese snooper fighters appear. From here on in, as Jap fighter opposition mounts, the B-29 crews are faced with combat recognition instead of observation for intelligence.



Landfall near Jap harbor enables 29's to check status of Jap heavy units. BB (*bottom*) can be distinguished from the cruiser to the left by

its huge beam. Another BB is moored close to dock (*right*) while the rectangular plan of a carrier shows up alongside quay (*top center*).

FIGHT OVER THE TARGET

It is directly over the target (in this case Osaka) that Japanese fighter reaction reaches its peak. The B-29's are now committed to their bombing run, and the interceptors no longer have to worry about being feinted out of position. In contrast to the few snoopers which picked up the U.S. formation as it made landfall, the opposition now consists of everything the Japs are willing to throw in. Single-engine and twin-engine, army and navy, familiar Zekes and Nicks, new Franks, Randys (Ki 102's), Georges, Jacks and probably Sams are trying to bring the bombers down.

Helping to fight off the Japs are the Iwo-based P-51's which



Huge B-29 seems to span Osaka as smoke from an earlier bombing billows up. The streets of a modern industrial city are clearly outlined

below, serve to guide the big bombers to their specific targets. Lighter areas of burned-out city (*top*) show the results of B-29's new technique.

joined up with the 29's just off Japan. More concerned with screening the Superforts than with destroying Jap fighters, the Mustangs usually stay close to the bomber formation. B-29 gunners cannot afford to make any mistakes as both friendly and enemy fighters sweep past. They must not only decide at whom to shoot but must also recognize and later report all of the attacking Japanese. Even though the nature of the opposition will not affect their own deployment, the position of their escort depends to some degree on the speed and endurance expected of the enemy interceptors.

The gunners must also be alert to spot freak weapons (rockets,



Mustang escort shelters Superfortresses during their vulnerable bombing runs, flies with the huge bombers only while they are over Jap soil.



Japan's fighter mainstay has long been the Mitsubishi Zeke line. Latest model, Zeke 52, is the one encountered most frequently by B-29's.



Sleek-lined Frank is one of the hottest fighters Japs can send up. Long fuselage contrasts with stubbiness of new Jap and U.S. Navy fighters.

"balls of fire," etc.) as well as new fighter designs. An example of the latter is the aforementioned Randy. Recognitionally similar to Nick, this new plane is fast, heavily armed and well protected (see page 10).

After the all-out battle during the bombing runs, Jap fighter attack continues as the 29's turn back toward the coast. Jap fighters rarely hang on to the bombers beyond land except to harass stragglers. Consequently, when the Superforts head out to sea, the P-51's break off escort and streak directly for Iwo Jima while the bombers gradually drop to lower altitudes on the long run home.



Okinawa-based P-47's may also be encountered over the Jap homeland. Long-range N model has greater wing span, squared-off wingtips.



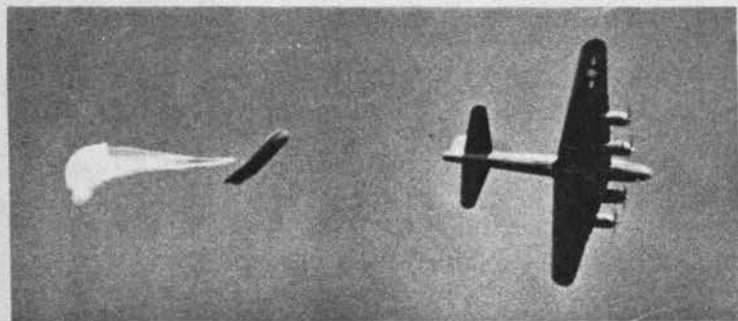
Jap army's Tojo has frequently attacked B-29's at medium altitudes. As the Jap air defense grows desperate, other old types may be seen.



Twin-engine planes like Nick (above) and Randy have harassed B-29's, whose crews must look for other, unidentified, twin-engine types.

RESCUE ON ROUTE HOME

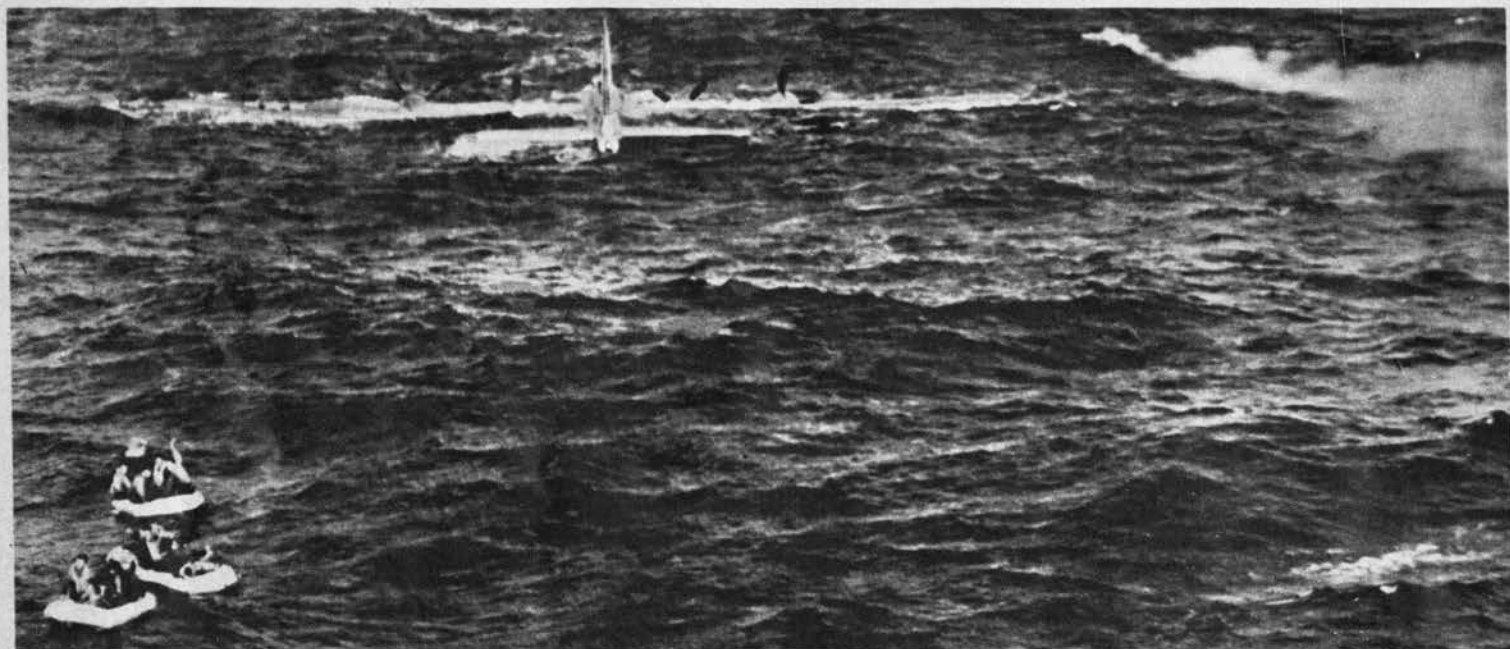
As soon as the Japanese shore line is left behind, the machinery of air-sea rescue comes into play around any damaged and straggling B-29's. If a Superfort seems headed for ditching, it alerts its base and ASR headquarters. It may also make direct contact with ASR patrols stationed along the route—Lifeguard subs, destroyers, Super-Dumbo B-29's and Dumbo Catalinas. These on-the-spot ships and planes then close in on the failing Superfort. While the ditched crew is being retrieved, the rest of the B-29's settle down on their airfields in the Marianas, bringing this gigantic bombing operation to a full circle of victory.



"Flying Dutchman" lifeboat is parachuted to downed fliers by ASR B-17. Modified B-17 carries the Dutchman beneath the bomb bay.



Lifeguard submarine, one of many stationed along route of a B-29 mission, has surfaced to pick up crew members floating on a life raft.



Ditched Superfort (top) floats on surface with its great wing awash. The crew has shoved off from the sinking plane in rubber life rafts,

waves at the plane taking these pictures. Below, a Mahan-Dunlap Class DD on air-sea rescue patrol draws near to take the men aboard.



BACK FROM JAPAN AFTER 3,200 MILES OF FLYING, A SUPERFORTRESS COMES IN AT SUNSET FOR LANDING AT ITS BASE ON GUAM

JAP VS. U.S. III

WITH THIS BEAM-VIEW CHART, THE JOURNAL CONCLUDES ITS SERIES OF DIAGRAMS TO ILLUSTRATE THE CONTRAST BETWEEN U.S. AND JAPANESE COMBAT AIRPLANE DESIGN.

SINGLE-ENGINE JAP

PROMINENT GREENHOUSES OR COCKPIT ENCLOSURES, SMALL AND FAR FORWARD ON FIGHTERS, LONG AND HIGH ON LIGHT BOMBERS, CHARACTERIZE JAP SINGLE-ENGINE PLANES. THEIR FUSELAGES ARE MOSTLY LONG AND TRIM.

ZEKE



FRANK



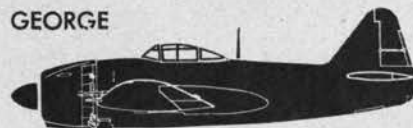
TOJO



OSCAR



GEORGE



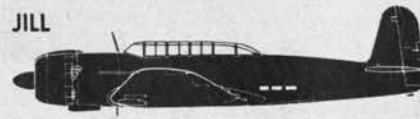
GRACE



JACK



JILL



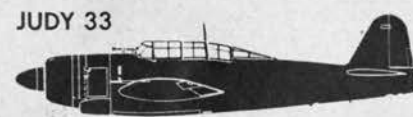
MYRT



JUDY 11



JUDY 33



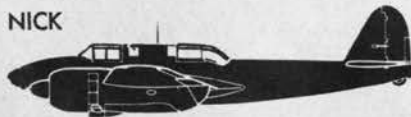
TONY



TWIN-ENGINE JAP

A LONG, TAPERING FUSELAGE WITH A "TACKED-ON" SINGLE FIN AND RUDDER TYPIFIES JAPAN'S TWIN-ENGINE WARPLANES. SINCE THEIR WINGS ARE MID OR LOW, NACELLES IN SOME CASES EXTEND BELOW THE BELLY LINE.

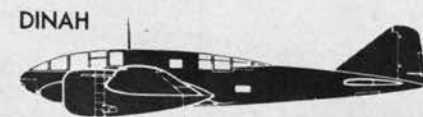
NICK



IRVING



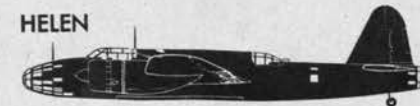
DINAH



FRANCES



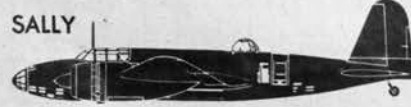
HELEN



LILY



SALLY



BETTY



PEGGY

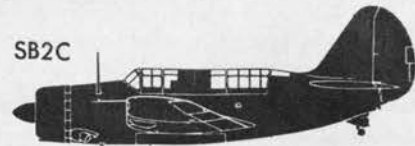
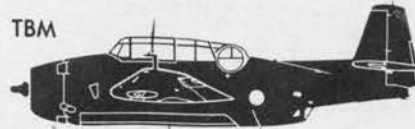


STUDY OF THESE NATIONAL CHARACTERISTICS, WHILE NOT A REPLACEMENT FOR STANDARD INSTRUCTION METHODS, MAY BE HELPFUL UNDER CERTAIN COMBAT CONDITIONS

WHERE POOR VISIBILITY MAKES RECOGNITION BY NAME IMPOSSIBLE. EXCEPT FOR THE U.S. NAVY'S NEW F8F, THE SAME AIRPLANES ARE SHOWN BELOW AS IN THE TWO PREVIOUS CHARTS.

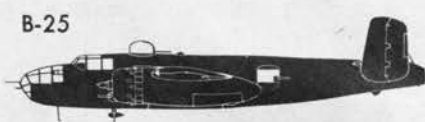
SINGLE-ENGINE U.S.

U. S. SINGLE-ENGINE PLANES HAVE HEAVIER NOSES, THICKER AND LESS SYMMETRICAL FUSELAGES THAN THE JAPANESE. ALTHOUGH NEWER U. S. MODELS HAVE TEARDROP CANOPIES, FAIRED COCKPITS ARE STILL OFTEN SEEN.



TWIN-ENGINE U.S.

SINCE THESE U. S. TWIN-ENGINE PLANES TEND TO HAVE HIGH OR MID-WINGS, THE NACELLES DO NOT BREAK THE BELLY CONTOUR. TWIN FINS AND RUDDERS OR TALL, BROAD FINS FAIRED INTO THE FUSELAGE MARK THEIR TAILS.



QUIZ ANSWERS

QUIZ NO. 1

- | | |
|------------|-------------|
| 1. PB4Y-2 | 7. PV-2 |
| 2. P-61 | 8. F7F |
| 3. Judy 33 | 9. Jack |
| 4. Frank | 10. SC-1 |
| 5. F8F | 11. A-26 |
| 6. B-29 | 12. Frances |

QUIZ NO. 2

1. L to R: Sugar Baker Sugar, Fox Tare Able, Fox Baker, Sugar Baker Love, Small Type Sugar
2. Fox Tare Baker
3. Fox Tare Charlie (K-type Ore Carrier)
4. Sugar Able Love Type 2
5. Sugar Able Love Type 1
6. Fox Tare Baker
7. Fox Baker
8. Sugar Charlie Sugar
9. Sugar Able Item

QUIZ NO. 3

- | | |
|-----------|--------------|
| 1. Nick | 9. Mosquito |
| 2. Oscar | 10. Peggy |
| 3. B-25 | 11. Spitfire |
| 4. F4U | 12. Jill |
| 5. PBV | 13. Grace |
| 6. George | 14. P-38 |
| 7. Lily | 15. B-32 |
| 8. F8F | |



This picture, taken by a U. S. Army photographer, shows three B-29's roaring along on their 3,200-mile flight from their base in the Marianas Islands to their target: Tokyo. Soon these huge Superforts will be operating from Okinawa, thus cutting over 1,000 miles from their round trip to Japan. For a pictorial mission with B-29's, see pp. 20-29.

CREDITS

The pictures used in the *Journal* came from the Allied Armed Services and are RESTRICTED, except for those listed below which are from private sources and are therefore unclassified.

Cover—Lieut. Loomis Dean, USAAF, Pacific Ocean Areas

4—Bottom right, Associated Press

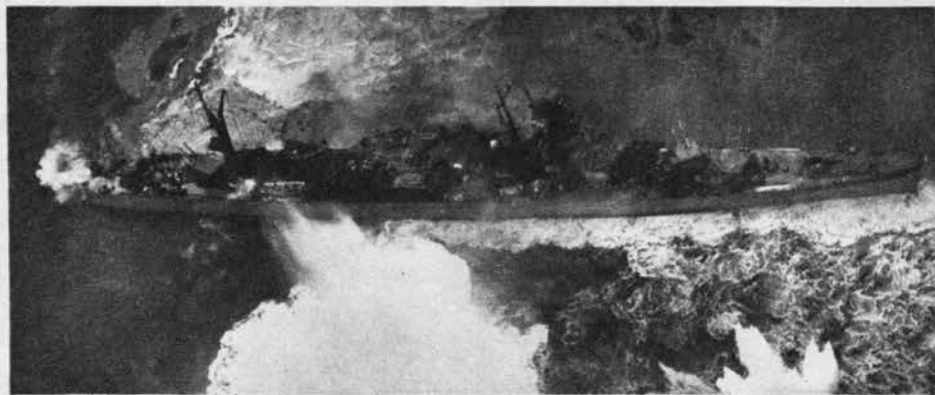
20—Lieut. Loomis Dean, USAAF, Pacific Ocean Areas

22—Top left, Elliot Elisofon

29—Lieut. Loomis Dean, USAAF, Pacific Ocean Areas

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NEWS & MISCELLANY



Combat close-up of Agano Class CL off Kyushu shows this Jap ship in detail for

first time. Note spacious deck plan, tower bridge and aircraft hangar abaft stack.

NEWS

Vampire, latest de Havilland plane, is Great Britain's most recent jet aircraft. It is a high-performance, single-seat fighter with a speed of over 500 m.p.h. The single jet unit, also made by de Havilland, is called Goblin.

Warwick V, a recon bomber, is the first combat aircraft in a line hitherto made up of cargo and air-sea rescue planes. It differs from its predecessors in its redesigned nose, greater length (75 ft., 6 in.) and a new dorsal turret. Its twin engines are Bristol Centaurs.

New Jap suicide glider has a span of about 28 ft., length about 12 ft., weighs about 870 lb. when loaded. It is made of a wooden frame covered with cloth and has a 50- to 75-lb. warhead in the nose. The wing is gull-shaped with equal taper on leading and trailing edges of outboard panels. Its single fin and rudder are angular. Ten to 14 "Raiding Gliders" are towed by one plane at 6,000 ft. and released nine to twelve miles from the target.

Rufe and Jake, obsolescent short-range single-engine Jap floatplanes, are being used as convoy escorts along Asiatic and Japanese coasts.

Sugar Baker Love, Standard Type A (modified), is the most important single target in Japanese merchant shipping. It comprises almost a sixth of the total merchant tonnage now available to the enemy. **Sugar Charlie Sugar** has been seen with

foremast centered on foredeck well and a thin mainmast on afterdeck abaft stack.

Jap MAC ships (see below,) are being converted from tanker hulls. Merchant ship conversions measure 475 ft. overall, have no elevators and carry about 20 planes on deck.

Expert Lookout's mark has been approved for qualified men assigned to top-side stations. The insignia, a pair of binoculars, is worn between the shoulder and elbow on the left sleeve for men in the seaman branch and on the right sleeve for all others.

Correction: In Quiz No. 3 of the June *Journal*, the craft at the far left of picture No. 1 is a U.S. LCC(1), Landing Craft, Control, and not a U.S. PT.

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Jap MAC ship (see text above) has carrier deck which stops far short of bow, stern.

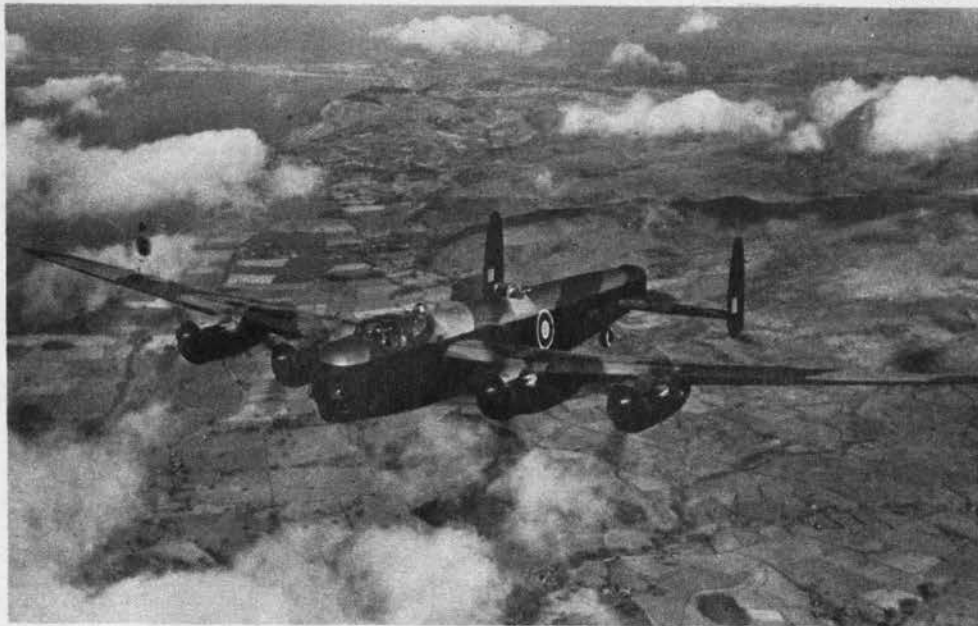


Captured Irving has new short cockpit, smooth dorsal line from cockpit to tail.

HEAVY BOMBER



U. K.



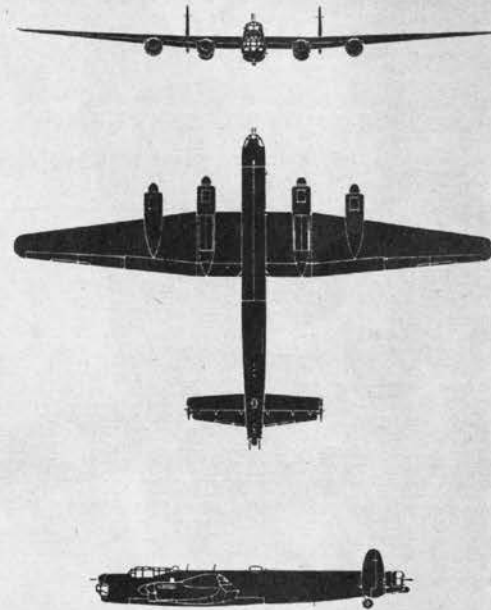
RECOGNITION FEATURES: The Lincoln is a four-engine mid-wing monoplane with twin fins and rudders. Originally known as the Lancaster IV, it bears a close resemblance to the earlier plane. Chief differences are its greater wing span, increased length and modified, slightly longer nose. It has the same deep boxlike fuselage for maximum bomb capacity, a more

slender wing, the same characteristic "guitar-pick" fins and rudders. Seen head-on, the Lincoln has less dihedral on outer wing panels than the Lancaster. **INTEREST:** The Avro Lincoln is Britain's latest and most efficient long-range heavy bomber. It has even greater range and bomb load than the Lancaster. With four Merlin 85 engines, it has a top speed of 320 m. p. h.

JULY 1, 1945
FROM DATA CURRENTLY AVAILABLE

WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 3

LINCOLN



SPAN: 120 ft.
LENGTH: 77 ft., 6 in.
APPROX. MAX. SPEED: 320 m. p. h.
SERVICE CEILING:

RESTRICTED

NOTE: This page is to be cut along dotted lines (above and below), added to the proper nation's section in the Recognition Pictorial Manual. The dots indicate perforations.

FIGHTER



U. S. A.



RECOGNITION FEATURES: Latest Grumman product to join the U. S. Navy is the F8F Bearcat, a single radial-engine, low mid-wing monoplane with single fin and rudder. Fully as stubby and square as its famous predecessors, F8F differs from the F6F mainly in having a bubble canopy and a higher, thinner tail with dorsal fin. In plan, Bearcat has square-tipped wings faired at the roots on leading edge and with slightly more taper

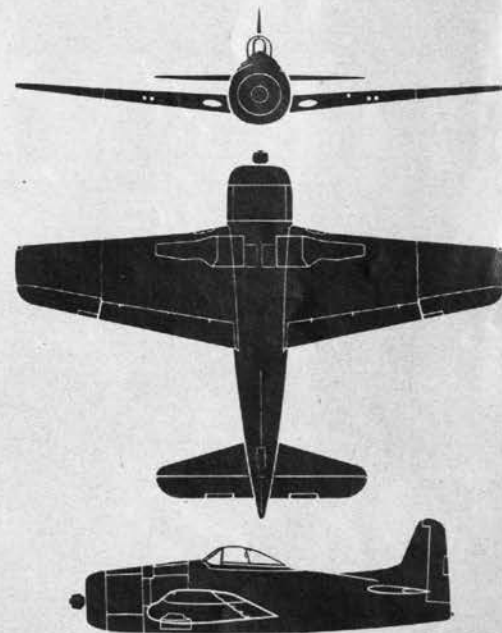
on trailing edge, a tailplane tapered on leading edge and lacking usual bite. Head-on, F8F has moderate wing dihedral from the roots, no wing break.

INTEREST: Lighter, smaller but more powerful than the F6F, this new carrier-based fighter is faster and more maneuverable. Six feet shorter than the Hellcat, more can be spotted on a flight deck: Self-sealing fuel tanks and armor protection are standard equipment.

JULY 1, 1945
FROM DATA CURRENTLY AVAILABLE

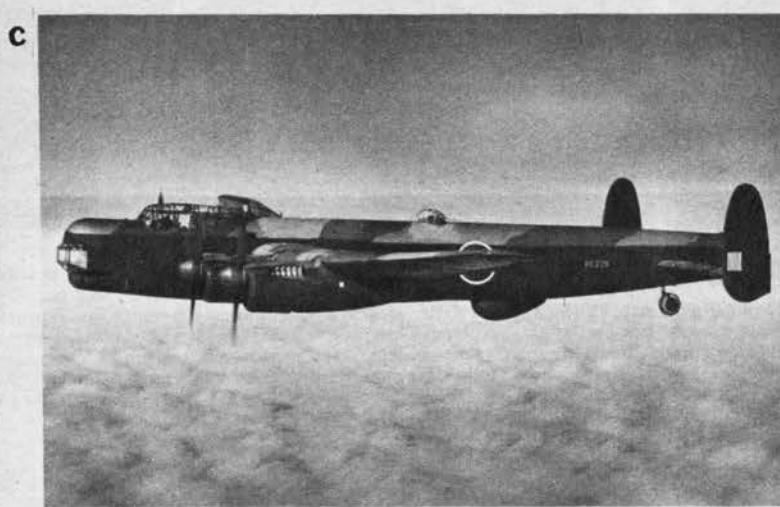
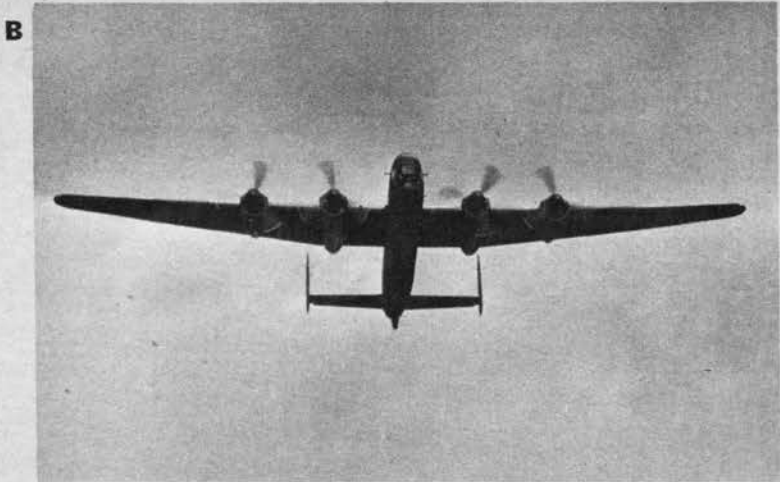
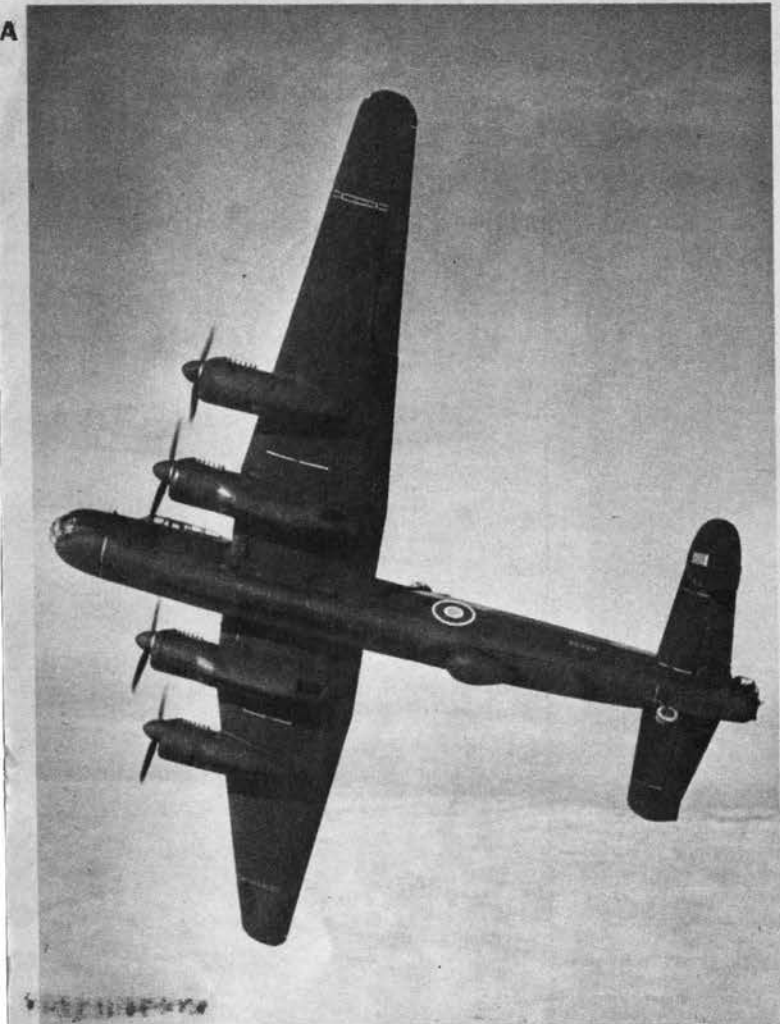
WAR DEPARTMENT FM 30-30
NAVY DEPARTMENT BUAE 3

F8F



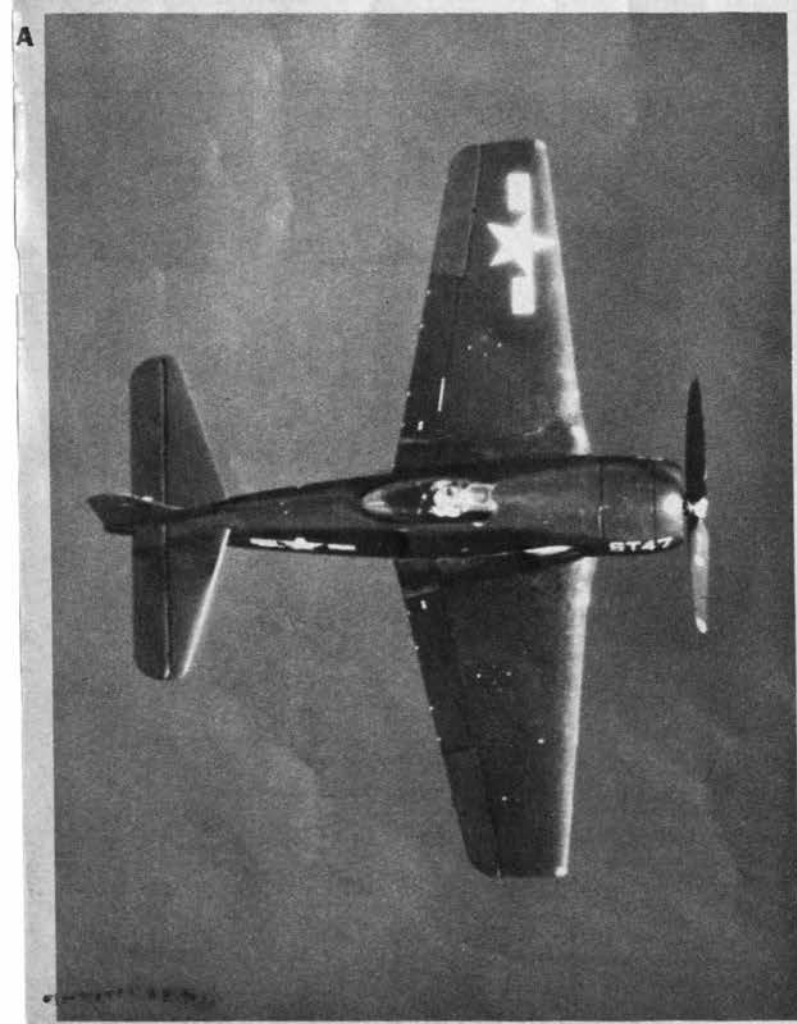
SPAN: 35 ft., 6 in.
LENGTH: 27 ft., 6 in.
APPROX. MAX. SPEED: Over 400 m. p. h.
SERVICE CEILING:

RESTRICTED

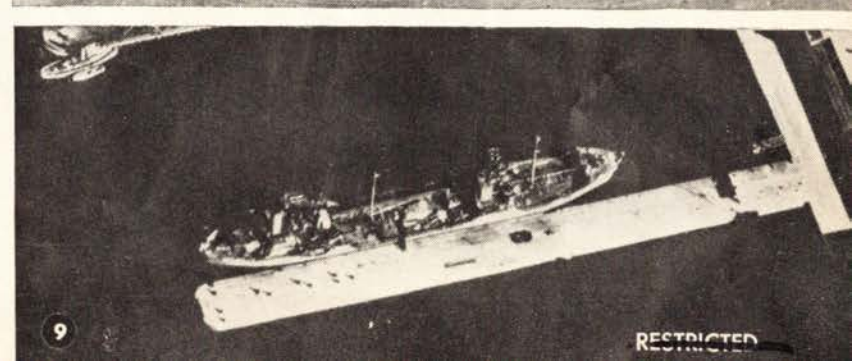
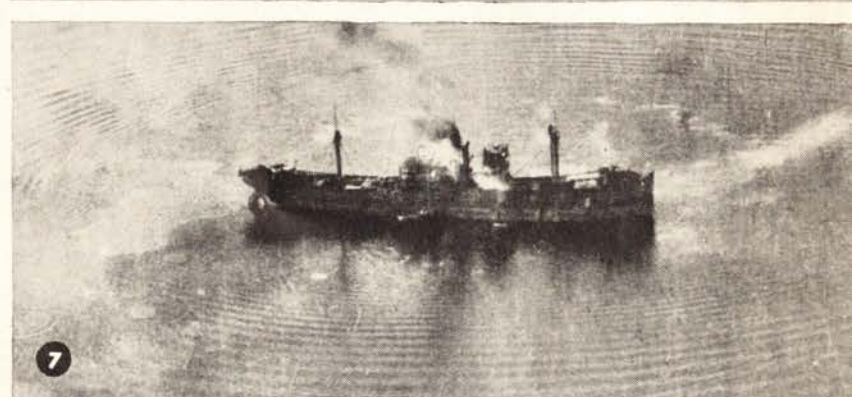
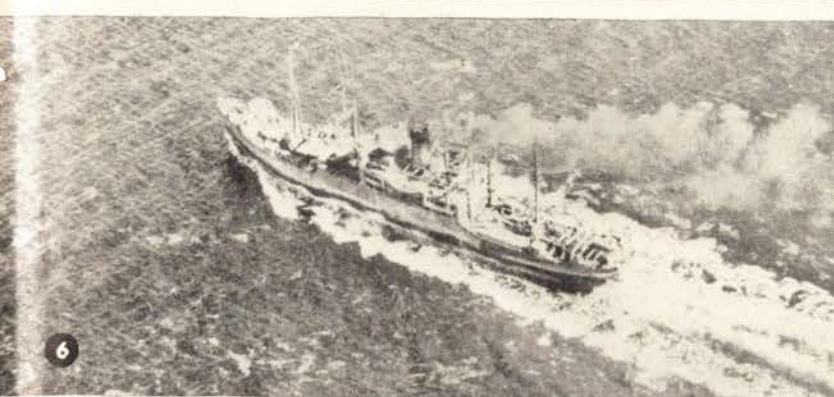
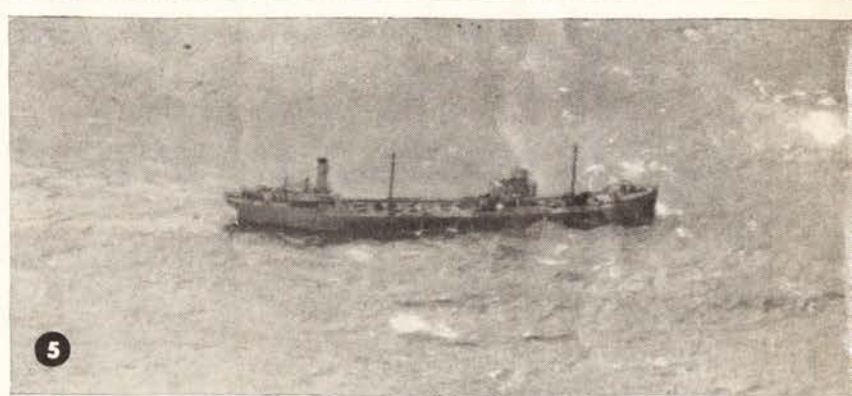
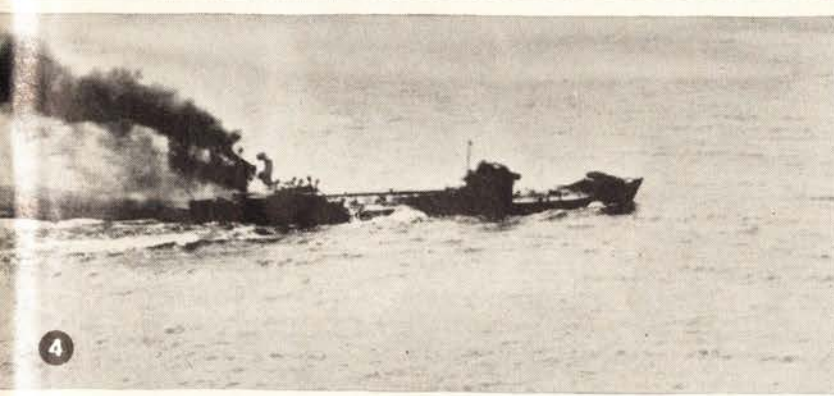
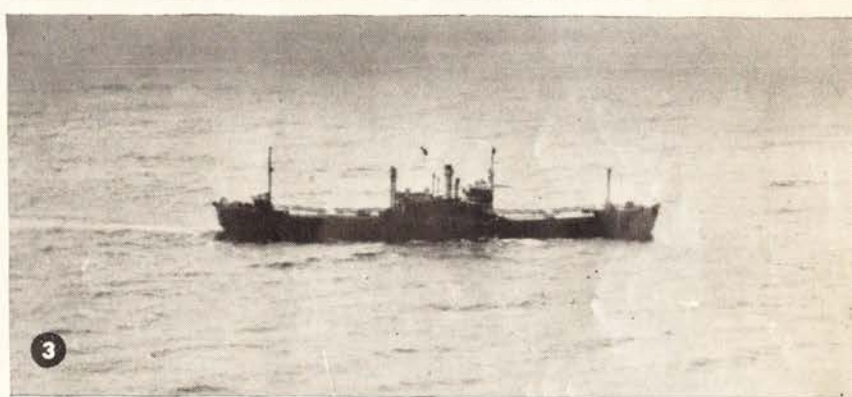
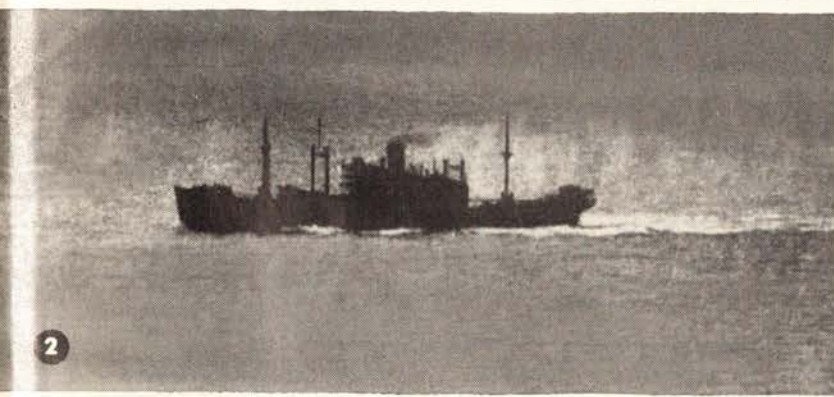
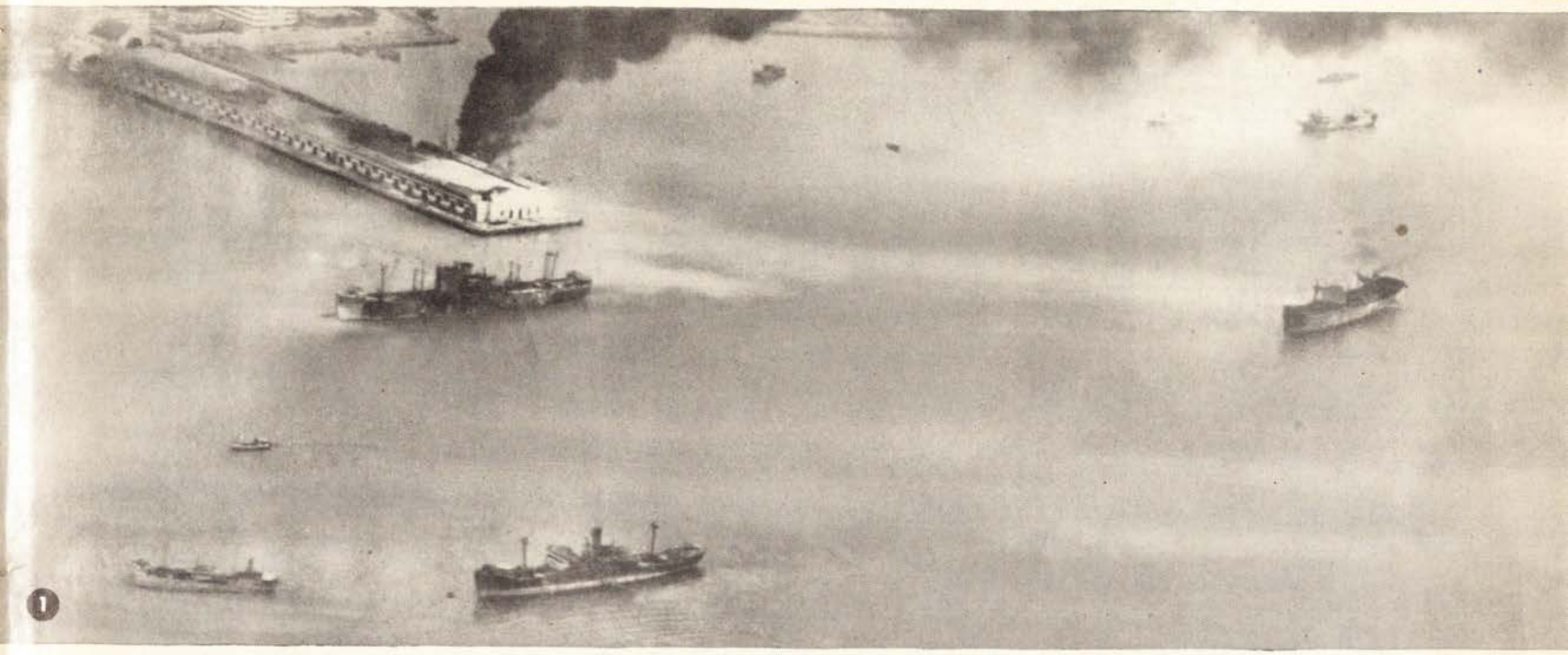


↑ **LINCOLN** was designed with two things in mind: Britain's big bombs and long Pacific ranges. Her bomb bays have already held "Ten-Ton Tessie," the earthquake bomb, and probably still more will be carried by her against the Pacific targets.

↓ **F8F BEARCAT** is the most spectacular carrier-based fighter that has yet appeared. It can take off quicker, climb faster than and turn with any plane it will meet. Moreover, it has the same sturdy construction as the reliable F6F and FM-2.



QUIZ NO. 2: ENEMY MERCHANT SHIPPING



QUIZ NO. 3: THIS MONTH'S SILLOGRAPHS

